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SUMMARY
OF THE
PRINCIPAL MEASURES
OF
THE VICEROYALTY
OF THE
EARL OF ELGIN
IN THE
PUBLIC WORKS DEPARTMENT,

JANUARY 1894 TO DECEMBER 1898.



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GOVERNMENT OF INDIA.
PUBLIC WORKS DEPARTMENT.

ESTABLISHMENT, PUBLIC WORKS DEPARTMENT.

General summary of measures affecting the establishment.—The more important measures affecting the establishment or individual branches of it, which have been under consideration, or on which definite orders have been passed during Lord Elgin's Viceroyalty, may be summarised under the following heads:

Major measures or discussions on proposed measures affecting the organization of the whole department or important branches of it—

- (1) The strength and recruitment of the Engineer establishment.
- (2) The strength and organization of Royal Engineer officers employed in the Public Works Department.
- (3) Improvement in the organization and pay of the superior grades of the Engineer and Managerial establishments.

Minor measures affecting the interests of certain sections of the establishment—

- (4) Reorganization of the Government of India Public Works Department Secretariat.
- (5) Modification of the pension rules, and improvements in the leave and pension rules of officers appointed in India.
- (6) Improvement in the rules affecting temporary engineers.
- (7) Modification in the rules of the Civil Engineers' Provident fund.
- (8) Local allowances to officers of the Irrigation branch, Punjab.
- (9) Abolition of practical training in England of Assistant Engineers from the Royal Indian Engineering college, Cooper's Hill.

Measures affecting the Railway branch only or chiefly—

- (10) Improvement in the Railway Provident fund.
- (11) Passing of the Provident Funds Act, 1897.
- (12) Recruitment of Traffic and Superior Accounts officers in England.

2. Strength and recruitment of the Engineer establishment.—Taking the above subjects in their order, the progress made in deciding upon, or modifying previous decisions regarding the strength and recruitment of the Engineer establishment has to be first considered.

The orders of the Secretary of State, which still regulate the ultimate strength and the rate of recruitment, were passed in 1890, with some later modifications as to the rate of recruitment which was under discussion up to 1892. Under these orders the strength was to be 730, of whom 130 were intended to be Royal Engineer officers, and the recruitment was to be 30 annually, of whom 24 were to be Civil Engineers and the rest Royal Engineers, the recruitment of whom was intended to suffice to maintain the full number of 130. For a few years prior to Lord Elgin's assumption of the Viceroyalty it had been apparent that the above strength and the recruitment were insufficient to meet the prospective wants of the department. The question of the ultimate strength has been very fully discussed in despatches from 1894 to the beginning of 1896 (see margin), and the final conclusion of this Government was that a total strength of 838 permanent engineers ought to be provided in addition to a fluctuating staff of about 100 temporary men. Of the 838 men, 758 were required to fill appointments

Despatch No. 15 Public Works, dated 21st March 1894, to Secretary of State.

Despatch No. 31 Public Works, dated 5th June 1894, to Secretary of State.

Despatch No. 35 Public Works, dated 19th July 1894, from Secretary of State.

Despatch No. 23 Public Works, dated 28th May 1895, to Secretary of State.

Despatch No. 31 Public Works, dated 8th August 1895, from Secretary of State.

Despatch No. 3 Public Works, dated 29th January 1896, to Secretary of State.

under Government; and 80 to fill appointments under foreign employers, namely, Native states, Railway companies, and Local bodies, the demands from whom for

engineers form a continual drain upon the permanent Government staff. No final orders have as yet been passed by the Secretary of State on these proposals, because the Government have not been in a position as yet to arrive at a final decision as to the numbers of the several classes of recruits required annually to maintain this strength. This is due to the difficulties connected with the employment of Royal Engineers in the department and to the doubts as to the number of Royal Engineer officers who will eventually be available, as compared with the full strength of 130 provided, on paper only, under the present arrangements. This question has been the subject of prolonged discussion as a wholly separate matter to that of the strength of the Engineer establishment; but no final decision has been yet reached. The Secretary of State has declined to consider the question of revising the orders as to ultimate strength until the question of recruitment can be also settled. As soon, therefore, as the Royal Engineer question has been settled, the other question will be brought up for final decision.

3. Strength and organization of Royal Engineers employed in the Public Works Department.—The question of the Royal Engineer organization, which is the second subject enumerated in paragraph 1, and which has been referred to in the foregoing paragraph in connection with its effect on the Engineer establishment, was taken up during the latter part of 1893 chiefly with reference to the separate organization and strength of the Military Works Department. This department had in the year 1881 been separated from the Public Works Department, while in the year 1889, its operations had been extended to the Madras and Bombay Presidencies.

The discussion of that question led to the appointment of a committee in May 1894, under the presidency of Mr. D. R. Lyall, C.S.I., I.C.S., to consider

Government of India resolution No. 2322 Ex., certain questions in connection with the dated 9th May 1894, in the Finance and Commerce Department. organization and cost of both the Military Works and Public Works Departments.

The committee submitted its report in December 1894, and it was considered very fully in the Financial, Military, and Public Works Departments. The final orders of Government on the recommendations of the committee were communicated to the Public Works Department

Government of India memorandum No. 2456 M. W., dated 4th September 1896, in the Military Department. in September 1896; and those orders, so far as they came within the scope of the department or affected the organization of its establishment, have been very fully discussed. Hitherto, however, no definite steps have been taken to modify existing arrangements in the Public Works Department, partly because the orders generally did not affect those arrangements, and partly also because, before any such steps can be taken, a final decision has to be given regarding the strength of Royal Engineers to be employed in India, which the Secretary of State has ordered to be materially reduced. The action to be taken by this department in fact wholly depends on this question.

4. Improvement in the organization and pay of the superior grades of the Engineer and Managerial establishments.—The third subject referred to in the summary of paragraph 1 is an important measure affecting the organization of the superior grades of the department. It was under discussion for a considerable

Despatch No. 11 Public Works, dated 24th March 1898, to Secretary of State. time, and proposals were eventually submitted to the Secretary of State embodying the recommendations of the Government

of India. These recommendations were supplementary to the measures adopted at the end of 1893 for improving the condition of service of the Executive and Assistant Engineer grades, and had in view the improvement of the pay of Chief and Superintending Engineers and officers ranking as such in railway management. The proposals were, first to abolish the third or lowest grade of the classes of Chief and Superintending Engineers, on the ground that the existing rates of pay of those classes were inadequate to the responsibilities of the several posts; and secondly to empower the Government of India to grant special allowances, in addition to grade pay, to Superintending Engineers and officers ranking as such who might be selected for specially responsible posts. The proposals have not as yet been accepted by the Secretary of State, who has

Despatch No. 21 Public Works, dated 7th July 1898, from Secretary of State. asked for further information as to the first, while definitely rejecting the second proposal in the form in which it was submitted to him.

5. Reorganization of the Government of India Public Works Department Secretariat.—Next turning to the less important measures enumerated in paragraph 1, the first place among these may be given to the reorganization of the Public Works Department Secretariat of the Government of India. This measure was found to be necessary chiefly in consequence of the increase of work in the Railway branch.

Its object was first to distribute the work into two portions, namely, that connected with railways only and that connected with all other branches of work, and to place each portion under a separate officer, one of whom would be styled the Railway Secretary and the other the Joint Secretary, Public Works Department. A secondary object was, without increase of expense, to make fuller use, for purely Secretariat work, of the Consulting and Deputy Consulting Engineers who had hitherto worked in communication with, but outside the Secretariat proper. To effect this object the post of Director General of Railways was abolished and his functions were distributed between two officers on somewhat lower pay who were styled Directors of Construction and Traffic and Deputy Secretaries, Railway branch. Out of the savings effected under the scheme certain special allowances, the necessity for which had been long felt, were granted to some of the lower paid graded officers of the Secretariat staff who

Despatch No. 219 Financial, dated 11th August 1897, to Secretary of State.

Despatch No. 29 Public Works, dated 14th October 1897, from Secretary of State.

Government of India resolution No. 3386 G., dated 23rd December 1897, in the Public Works

hold the position of Under and Assistant Secretaries. The correspondence and orders in which this scheme was proposed, accepted, and in due course notified by Government, are quoted in the margin.

6. Modification of the pension rules, and improvements in the leave and pension rules of officers appointed in India.—The modification in pension and leave rules, which is the fifth of the subjects enumerated in paragraph 1, affects all officers of the Public Works and other miscellaneous departments not being members of the Indian Civil Service or the Military service.

The alteration in the pension rules consisted in the extension of the special

Government of India resolution No. 3597 P., dated 21st August 1896, in the Finance and Commerce Department.

pension of Rs. 1,000 a year to all officers, irrespective of their original appointment, who fill satisfactorily for not less than three

years certain specified appointments which carry the rank of head of a department. In the Public Works Department the appointments which fall within that category may be generally described as offices, in the several branches of the department, which carry the rank and pay of Chief Engineer, or appointments carrying higher rank and pay. The same rule applies to posts of corresponding rank and pay in the Telegraph Department.

At the same time the older rules which allowed special pensions of Rs. 1,000 and Rs. 2,000 to officers of the Engineer establishment and Telegraph Department who hold satisfactorily for three years the appointment of Superintending Engineer and Chief Engineer respectively, or appointments of corresponding rank in the several branches, were, as regards officers entering the service after the 11th October 1893, abrogated. Thus present incumbents, being Engineers or Telegraph officers on the date above mentioned, come under the older rules; while future incumbents of the same classes come under the later rules. Officers, being neither Engineers nor Telegraph officers, were under the new orders rendered eligible for the first time to the special additional pension of Rs. 1,000.

The modification in the leave rules, as affecting officers appointed in India, in contradistinction to those appointed in England, were of considerable scope and importance. Hitherto all officers appointed in India since 1871, whatever their pay, were under the Indian Service leave rules, which were much inferior, in regard both to the amount of leave admissible and to the maximum leave allowances, to the European Service rules. The scope of the extension of the superior rules to the Indian appointed men of the Public Works Department was the sub-

Despatch No. 71 Financial, dated 18th March 1896, to Secretary of State.

Government of India resolution No. 2498 P., dated 10th June 1896, in the Finance and Commerce Department.

Government of India resolution No. 2507 P., dated 10th June 1896, in the Finance and Commerce Department.

ject of prolonged discussion from the commencement of 1894 to 1896. The final conclusions of the Government of India were set forth in the despatch to the Secretary of State quoted in the margin. They were accepted by His Lordship and

were published in two resolutions of Government in June 1896. The general effect of the orders was to admit to the European leave rules all Indian appointed officers, not being members of a Provincial Service or appointed subject to the condition of being natives of India, on their attaining a rank in the department carrying the pay of Rs. 800 and above.

7. *Conditions of service of temporary engineers.*—A good deal of consideration was given during the period under review to the sixth subject enumerated in paragraph 1, namely, to the conditions of service of temporary engineers. These men have been utilised since 1881 to supplement the permanent strength, and were first employed wholly on new construction or survey. By degrees their employment has come to be of a more permanent character. Those who have given satisfaction have been re-engaged for successive construction works, and have also been utilised on the maintenance of completed works to supplement deficiencies in the permanent establishment. This has happened to a very considerable extent in the Railway branch and in the Punjab Irrigation branch. At the same time under the conditions of their appointment and under the general rules of the service, their appointments are terminable with one month's notice on either side, and they can be granted a limited amount of leave, only on condition that no additional expense is involved in the payment of substitutes. As it was evident that such conditions of service were most disadvantageous to the men themselves, and also liable to prove inconvenient to their employers, who might be placed at serious disadvantage by a number of these men throwing up their employment with a month's notice, the Government of India formulated certain proposals to enable them to enter into longer engagements with selected men of this class, and also to extend to the same persons the advantages of the Indian Service leave rules, as applied to permanent men, coupled with the power of granting leave pay on discharge in exchange for leave due but not taken. These proposals were submitted to the Secretary of State, but not wholly approved by him, on the ground that it was inexpedient to recognise men of this class as an organised service, as would be done by drawing up a recognised set of leave rules for them. He agreed, however, that individual cases might be dealt with, so far as leave was concerned, on the lines proposed. This decision was accepted and orders to the same effect were issued.

Despatch No. 362 Financial, dated 23rd December 1897, to Secretary of State.

Despatch No. 8 Public Works, dated 3rd March 1898, from Secretary of State.

Government of India circular letter No. 1889G., dated 1st July 1898, in the Public Works Department.

8. *Modification in the rules of the Civil Engineers' Provident fund.*—Turning next in order to the measure which stands seventh in the general summary, it may be explained that, for some time past, complaints had reached the Government of India from depositors in the Civil Engineers' Provident fund that, with the fall in the sterling value of the rupee, the value of the deposits was constantly diminishing. Requests had been accordingly put forward that Government should repay the deposits at a favourable rate of exchange, or should arrest the depreciation by conversion of the deposits into sterling; a third alternative was suggested that Government should allow depositors, who desired to do so, to withdraw their deposits and convert them into sterling when exchange happened to be favourable.

These several proposals, it was observed, were wholly opposed to the contract between Government and the depositors, which is to receive rupees and pay them out with compound interest on the death or retirement of the depositors; nevertheless Government were willing to depart so far from the first essential of the agreement as to convert the deposits into sterling and thereafter credit interest at three instead of four per cent. per annum, the latter being the rate allowed on the rupee deposits. They were also willing that the conversion into sterling should be effected at the rate prevalent when the option was exercised, or that it should be effected retrospectively for the whole period during which the money had been deposited, that is, that the deposits of each year from the commencement should be converted at the average rate of that year, compound interest being also recalculated on the reduced rate of 3 per cent.

Despatch No. 19 Public Works, dated 19th May 1898, to Secretary of State.

Despatch No. 22 Public Works, dated 7th July 1898, from Secretary of State.

A recommendation in this sense was made to the Secretary of State and accepted by him, and the orders conveying the decision will shortly issue.

9. *Grant of local allowances to officers of the Irrigation branch, Punjab.*—The eighth measure enumerated in paragraph 1 is noteworthy as affecting the interests of a small, but important body of officers.

The proposal to grant a local or, as it was first called, a jungle allowance to the Executive and Assistant Engineers of the Punjab Irrigation branch, was brought forward in its original form by the Honourable Sir James Lyall, when Lieutenant-Governor of the Punjab; but was rejected on the ground that its effects might be too far reaching in the way of opening up other similar claims. The question, which meanwhile had been referred to in Parliament, was taken up *de novo* by the Government of India in 1897, and was put forward in a form

which, to a considerable extent, preserved it from the previous objection. The effect of the proposals, as finally put forward, was to grant local allowances of Rs. 100 and Rs. 50 respectively to officers of the above class, who had qualified for such allowance by prolonged residence in

certain stations where service is unpopular on account of the arduous nature of the duties, bad climate, unfavourable geographical conditions, and segregation from society. The measure was estimated to cost Rs. 2,400 a month immediately; but as a measure of encouragement to a hard-working body of officers on whose exertions a large revenue as well as the prosperity of a large area of cultivated land depends, this outlay was considered to be trifling.

10. *Abolition of practical training in England of Assistant Engineers from the Royal Indian Engineering college, Cooper's Hill.*—The question of the abolition, or partial abolition, of the practical course in England for the engineers sent out from the Royal Indian Engineering college, which is the next subject referred to in paragraph 1, is one which was first suggested by the Secretary of State in 1889, but was put aside in deference to the views of the Government of India, who at that time were opposed to the proposal. The matter was again taken up in 1896, and the recommendation of the advisers of the Government of India being in favour of abolishing the practical course, the views of Local Governments were invited. These were generally in favour of changing

Government of India circular letter No. 1963 G., dated 5th August 1896, in the Public Works Department.

Despatch No. 18 Public Works, dated 28th April 1897, to Secretary of State.

addressed with a recommendation that the present practical course should be abandoned; that not more than two selected students in each year should undergo a practical course in Mechanical or Sanitary Engineering, or in Mining or Architecture; and that the theoretical course should be re-arranged so as to provide a better training in actual Engineering practice. These proposals were accepted by the Secretary of State and came into full effect from the autumn of 1898, and the orders were notified for

Despatch No. 17 Public Works, dated 15th July 1897, from Secretary of State.

Government of India resolution No. 2352 G., dated 1st September 1897, in the Public Works Department.

general information and guidance.

11. *Improvement in the Railway Provident fund.*—Turning next to the measures affecting the Railway branch only or chiefly, no doubt the most important measure is that connected with the improvement of the Railway Provident fund, which, in the case of all railway employés appointed since September 1881, takes the place of pension. This question was

Despatch No. 82 Railway, dated 19th December 1894, to Secretary of State.

Despatch No. 7 Railway, dated 24th January 1895, from Secretary of State.

Despatch No. 12 Railway, dated 12th February 1895, to Secretary of State.

Despatch No. 28 Railway, dated 26th March 1896, from Secretary of State.

funds owing to the fall in the sterling value of the rupee, and also in connection with the decision of the Secretary of State to allow the Indian Railway Companies to grant exchange compensation allowance to their employés subject to the same rules and restrictions as in the case of Government servants. The proposal, as put

forward by the Boards of the several companies, was that the deposits should be paid on death or retirement at a favourable rate of exchange to employés retiring to Europe, America or the British Colonies, and a similar request appeared in the memorials of the State railway employés. The question was a most intricate and difficult one, and was for many months under discussion. In the course of the enquiry it was shown very clearly that the payment of the deposits at a favourable rate of exchange would have an insignificant effect in many cases where the inadequacy of the sums at credit, even after a full period of service, was due to the insufficiency of the subscriptions of the depositors and of the contributions from railway funds under the existing rules. On the other hand, it appeared that, in cases where the rules of the funds provided adequate subscriptions from the depositors and adequate contributions from the railway, there were no sufficient grounds for repaying the deposits at a favourable rate of exchange.

The final proposals were embodied in a despatch to the Secretary of State which issued in January 1898. Briefly they

Despatch No. 3 Railway, dated 13th January 1898, to Secretary of State.

were that the subscription of the employés of State lines should be increased to a

month's pay annually, and that Government should contribute an equal sum out of the profits of the railway, one-half of such subscriptions to be absolute, the second-half to be contingent on the railway net earnings and not to exceed one per cent. of such earnings. It was further provided that the deposits might, at the option of the depositors, be kept from the commencement on a sterling basis, interest being thereafter credited at 3 instead of $3\frac{3}{4}$ per cent. which last is the rate for rupee deposits. These rules were to apply to all future entrants and to all present incumbents who might elect them. In the case of men of 20 years' service or 40 years of age and upwards, who could not benefit much by the application of the new rules to the rest of their service, it was left optional, in the event of their retiring to Europe, America or the Colonies, to have their deposits repaid at 1s. 6d. per rupee. These same rules, it was proposed, to apply, so far as they might be applicable and with the necessary modifications, to the employés of companies' lines with the exception of the employés of the East Indian railway, in whose case it was held *prima facie* that the existing fund and rules afforded adequate provision. The proposals were fully accepted by the Secretary of State, and the orders as affecting the employés of State railways were in due course

published. The necessary instructions

Despatch No. 58 Railway, dated 14th July 1898, from Secretary of State.

will shortly issue for applying them, with the necessary modifications, to the employés of companies' railways.

12. *Passing of the Provident Funds Act, 1897.*—The Provident Funds Act, 1897, the passing of which is the second of the measures affecting the Railway branch chiefly, enumerated in paragraph 1, was initiated wholly with reference to difficulties encountered in administering the Provident funds of State and companies' railways. These are no doubt far the most considerable and the most important of all the Provident funds in India, whether administered by, or with the authority of, the State, or any local authority.

The difficulties above referred to were connected first with the legal difficulties, and expenses involved in the payment of small balances to the heirs of deceased depositors; and secondly with the attachment by Courts of law of the deposits of the depositors who fall into debt.

The effect of the Act is to redress each class of difficulty, by enabling the managers of the funds to pay out deposits not exceeding Rs. 2,000 in a simple and expeditious way to the persons ostensibly entitled to the money; and by wholly protecting the deposits, while held at credit of the fund, from legal attachment.

The passing of the Act greatly facilitates the administration of all these railway funds.

13. *Recruitment of Traffic and Superior Accounts officers in England.*—The last subject referred to in the summary of measures contained in paragraph 1 relates to the recruitment of Traffic and Accounts officers in England. Hitherto the Traffic branch had been recruited almost entirely in India, the only exceptions being the few Engineer officers who, of their own choice, had been transferred to this branch from the Engineer establishment. Although appointed in India most of the officers were Europeans. Of late years a system of examination after nomination, and not by

open competition, had been instituted for recruiting the Traffic branch, and four examinations had been held resulting in the appointment of 11 officers. It had been the practice also, throughout, to promote deserving subordinates to the establishment. It was found that the officers appointed after examination in India did not as a rule come up to the standard which the Government of India desire to maintain in their Traffic officers. They were, almost entirely, born and educated in India, and did not possess the European qualifications considered necessary for this service. At the time when the Government of India were forming this conclusion, the Secretary of State proposed, in the interests of the Royal Indian Engineering college, Cooper's Hill, that some of the Traffic appointments, as well as some of those in the Civil and Public Works Accounts branch, should be opened to students of the college. The Government of India, under the above circumstances, willingly assented to the proposal, and agreed to recruit one and two students in alternate years for the Traffic branch. It was arranged, however, that the recruitment through the subordinate branch should still continue, and that one recruit annually of this class

Despatch No. 12 Public Works, dated 7th May 1896, from Secretary of State.

Despatch No. 34 Public Works, dated 4th November 1896, to Secretary of State.

Despatch No. 324 Financial, dated 4th November 1896, to Secretary of State, paras. 13-16.

should be appointed, so that an avenue of appointment to the Traffic establishment might still be open to persons domiciled in India. The correspondence on the subject is quoted in the margin.

The recruitment of the Superior Accounts branch of the Public Works Department had been conducted on very similar lines to that of the Traffic branch, that is to say, in addition to occasional transfers from other branches, it was regularly recruited partly by promoted subordinates and partly by examination of nominated candidates held annually, one-third and two-thirds of the vacancies being allotted to each class respectively. It had also been arranged that one-third of the appointments after examination or two-ninths of the whole number of vacancies should be reserved for Statutory Natives of India, leaving four-ninths for unrestricted competition to Europeans and Statutory Natives alike. The same objections were found to apply to the men appointed by examination in India as have been stated above to apply to the Traffic officers similarly appointed; and it was resolved, in connection with the similar proposals made regarding the Traffic branch, that in future the appointments not reserved for Statutory Natives and promoted subordinates, that is, four-ninths of the whole number, should be offered to students of the Royal Indian Engineering college. Under this arrangement one recruit annually and occasionally two are obtained in that manner; while the rest, that is, two or three annually, continue to be recruited in India, either from among the subordinates or from Statutory Natives appointed after examination.

DOCKS AND HARBOURS.

14. *Madras Harbour works.*—A revised estimate for these works, amounting

Despatch No. 41 Public Works, dated 26th September 1895, from Secretary of State. to Rs. 1,27,52,508, was sanctioned by the Secretary of State in 1895, and the work has been practically completed.

15. *Kidderpore docks.*—In order to provide accommodation for the shipping trade of Calcutta, which had grown too large to be dealt with at the jetties, the Calcutta Port Commissioners submitted in 1896 a scheme for relieving the jetties by reserving them exclusively for the discharge of import cargoes, and by offering additional facilities for the shipment of export cargoes at the docks. This scheme, which met with some opposition at first from certain shippers, was introduced in 1897, and is likely to prove a success. An expenditure of Rs. 20,35,187 in providing the necessary facilities at the docks, such as coaling berths and jetties, salt golas, lighters, quarters, etc., was sanctioned by the Government of India.

ROADS.

16. *Nichuguard-Manipur road.*—A revised estimate of Rs. 33,27,280 was

Despatch No. 48 Public Works, dated 19th September 1894, to Secretary of State.

Despatch No. 55 Public Works, dated 8th November 1894, from Secretary of State.

Despatch No. 51 Public Works, dated 3rd December 1896, from Secretary of State.

sanctioned by the Secretary of State in 1894 for this important line of communication between Assam and Upper Burma, and a further expenditure of Rs. 52,389 was incurred in 1896 in a realignment necessitated by an encroachment of the Sengmai river. The road is now practically completed.

17. *Roads in Upper Burma.*—The construction of roads in Upper Burma has been vigorously pursued, and the country is being rapidly opened out by means of them.

BUILDINGS.

18. *“Retreat” estate, Simla.*—This estate in Mashobra was acquired by the

Despatch No. 31 Public Works, dated 3rd September 1895, to Secretary of State. Despatch No. 49 Public Works, dated 14th November 1895, from Secretary of State.

19. *“Snowdon” estate, Simla.*—The difficulty of obtaining on lease a suitable house for the Commander-in-Chief for a longer period than one year made it

Despatch No. 9 Public Works, dated 10th February 1897, to Secretary of State. Despatch No. 7 Public Works, dated 8th April 1897, from Secretary of State.

“Snowdon.” The cost of purchase and the necessary improvements amounted to Rs. 1,94,391. The tenant pays a rent of Rs. 5,000 annually.

20. *Government House, Naini Tal.*—The old summer residence of the Lieutenant-Governor of the North-Western Provinces and Oudh having been declared unsafe, a new building has been sanctioned at an estimated cost of Rs. 6,82,226, and is now in course of construction.

21. *European General Hospital, Calcutta.*—A committee was appointed in 1896 to investigate and report on the requirements of the old General Hospital in Calcutta. The need of drastic reform had for some years been pressed upon Government, and many of the evils complained of had long been recognised. Sir Alexander Mackenzie having strongly supported the recommendation of the

Despatch No. 6 Public Works, dated 24th February 1898, to Secretary of State.

Despatch No. 15 Public Works, dated 31st March 1898, from Secretary of State.

committee to rebuild a large part of the hospital, an estimate to effect this, amounting to Rs. 27,03,475, was sanctioned by the Secretary of State in 1898 and the work is now in progress.

22. *Public Works Department Secretariat building, Simla.*—The old building of the Government of India, Public Works Department offices in Simla having been completely destroyed by fire in February 1896, a new building has been constructed of iron and masonry on the same site at a cost of Rs. 4,43,000.

23. *Office for Comptroller of Post Office, Calcutta.*—A new building for the staff and records of this officer was sanctioned in 1895 at an estimated cost of Rs. 6,62,823, because the increased staff of the General Post Office, necessitated by the ever-expanding work of the Post Office in India, made it impossible to continue to accommodate the Comptroller and his office in the General Post Office building. The work is now nearly completed.

MISCELLANEOUS.

24. *Electric lighting of Calcutta.*—A scheme for lighting the city of Calcutta by electricity has lately been approved by the Government of India, and a license has been granted to Messrs. Kilburn & Co. to carry the scheme into effect. An electrical engineer has been appointed on a salary of Rs. 650 rising to Rs. 800 to safeguard the interests of Government.

25. *Memorial at Manipur.*—A monument has been erected at Manipur in memory of the officers and men who were murdered and killed in action at that place in 1891. A tablet has also been placed to their memory in St. Paul's Cathedral, Calcutta.

26. *Earthquake of 1897.*—The earthquake of July 1897 caused very great destruction of Government property in Assam, every masonry building being levelled to the ground in some of the districts. The features of this unprecedented calamity will doubtless be recorded in another part of the summary of Lord Elgin's administration. It may, however, be mentioned here that the cost of the re-construction of buildings and roads has been estimated approximately at Rs. 34,00,000. Considerable damage was caused also to Government property in the Northern and Eastern districts of Bengal, and it has been necessary to create three temporary Public Works divisions to restore the buildings.

IRRIGATION.

27. *Classification of Irrigation works.*—Irrigation works in India are divided into the following classes:

Major works—

- (a) Protective works.
- (b) Productive works.

Minor works—

- (c) Works for which capital and revenue accounts are kept.
- (d) Works for which only revenue accounts are kept.
- (e) Works for which neither capital nor revenue accounts are kept, and Agricultural works.

28. *Protective works.*—Only two large projects of this class have been under construction during the past four years, the Nira canal in the Bombay Presidency,

Despatch No. 34 Public Works, dated 19th July 1894, from Secretary of State. and the Rushikulya project in the Madras Presidency. The former, which was sanctioned during Lord Lansdowne's administration, is now nearly complete, and the latter, for which a second revised estimate was sanctioned by the Secretary of State in 1894, is approaching completion.

A revised estimate, amounting to Rs. 4,26,000, of the cost of the Surada

Despatch No. 22 Public Works, dated 28th July 1898, from Secretary of State. Reservoir of this latter project, due to the strengthening and improvement of the Dam, has since been sanctioned by the Secretary of State, raising the total cost of the project to Rs. 49,45,820.

29. *Productive works.*—One of the most important works of this class is the Chenab canal in the Punjab. The revised project was sanctioned by the Secretary of State in 1892 at an estimated cost of Rs. 2,65,15,966. The main and branch canals are all finished, and the work has been open for irrigation since 1892, but the distributary system is still incomplete, and irrigation is not therefore fully developed. The canal has more than fulfilled the results predicted of it in 1894 and returned 6 $\frac{3}{4}$ per cent. on its capital outlay in 1896-97. It is expected eventually to pay a dividend of over 16 per cent. and to irrigate 1,300,000 acres.

Another project in the Punjab which is also expected to be remunerative is the Jhelum canal. It was sanctioned by the Secretary of State in 1888 for Rs. 1,25,26,676, and is estimated to irrigate 423,360 acres. It was held in abeyance for want of funds pending completion of the Chenab canal, but work was commenced in 1896-97 on the excavation of some of the channels as famine relief work, and will be carried on in earnest in 1899-1900.

In the North-Western Provinces, an important project known as the Fatehpur branch of the Lower Ganges canal was sanctioned by the Secretary of State in 1893 at an estimated cost of Rs. 37,25,000. The canal is an extension of the Ganges canal from Cawnpore, through Fatehpur, into the Allahabad district. Work on its construction was begun in 1894-95, and is now approaching completion. The area that will be irrigated is estimated at 116,000 acres.

A revised estimate for the Eastern Nara works in Sind, amounting to Rs. 64,05,768, was sanctioned by the Secretary of State in 1895. The project,

Despatch No. 12 Public Works, dated 21st March 1895, from Secretary of State. which is now practically complete, paid a return in 1896-97 of 6.21 per cent. on its capital outlay of Rs. 62,30,520 incurred up to the end of that year, and irrigated 236,807 acres.

Four new projects in Sind have been sanctioned as Productive works. The largest is that of the Jamrao canal, which is estimated to irrigate 260,000 acres

Despatch No. 25 Public Works, dated 3rd May 1894, from Secretary of State. and to give a return of nearly 7 $\frac{1}{2}$ per cent. on its capital cost. Against a revised estimate of Rs. 77,26,671, the actual expenditure up to the end of 1896-97 amounted to Rs. 25,38,900. The work will not be completed before 1902. The other three projects are for remodelling and extending the existing Nasrat, Nau-

Despatch No. 51 Public Works, dated 5th December 1895, from Secretary of State. lakhi and Dad canals at an estimated cost of Rs. 54,51,324. Work has been commenced on the Dad canal, but not on the two others.

In Upper Burma an important Productive work, the Mandalay canal, was sanctioned by the Secretary of State in 1896 at an estimated cost of Rs. 32,32,804.

Despatch No. 42 Public Works, dated 12th November 1896, from Secretary of State. The canal is designed to irrigate 72,000 acres in a tract of country which is almost

rainless and which cannot on this account be cultivated until water is supplied by irrigation. A return of nearly 7 per cent. is anticipated when the project is fully developed.

The Productive Irrigation works of which construction estimates have been closed during the period of Lord Elgin's administration are as follows :

In the Punjab Sirsa branch of the Western Jumna canal.

Despatch No. 2 P. W., dated 31st January 1895, from Secretary of State.

Despatch No. 23 P. W., dated 23rd October 1897, from Secretary of State.

Sidhnai canal.

Lower Sohaq and Para canal.

In Madras Kistna-Delta system.

Despatch No. 38 P. W., dated 26th July 1894, from Secretary of State.

Sangam Anicut system.

Periyar Irrigation project.

In Bombay Mutha canals project.

Despatch No. 4 P. W., dated 11th March 1897, from Secretary of State.

Lakh canal.

Lower Panjhra river works.

In Bengal Orissa Irrigation project.

Despatch No. 44 P. W., dated 12th November 1896, from Secretary of State.

Hijili Tidal canal.

Despatch No. 30 P. W., dated 21st October 1897, from Secretary of State.

Completion reports have been received and submitted to the Secretary of State for the three Punjab and two Bengal works, and indicate that the former are highly remunerative and have more than fulfilled what was anticipated. The Bengal works, on the other hand, have failed to satisfy the conditions of their class.

30. *Minor works.*—A number of small projects, too numerous to describe individually, have been constructed during the past four years under the three classes of Minor works, and have in almost every case been attended with success both to the cultivator and to the Government. The Minor Irrigation works for which capital accounts are kept paid, collectively, a return of over 9 per cent. on their capital outlay in 1896-97.

31. *General.*—The following table shows clearly the financial improvement in Major works and those Minor works for which capital accounts are kept since the year 1887-88 :

	1887-88.	1891-92.	1895-96.	1896-97.
	Rs.	Rs.	Rs.	Rs.
<i>Protective works.</i>				
Capital outlay to end of year .	1,51,37,423	1,82,17,260	2,05,04,720	2,09,92,630
Net revenue of year .	—66,447	1,05,710	1,45,760	3,25,070
Percentage of profit on capital .	..	0.58	0.71	1.55
<i>Productive works.</i>				
Capital outlay to end of year	25,62,23,599	27,81,46,030	30,47,02,300	31,25,29,480
Net revenue of year	84,10,296	1,50,97,230	1,61,39,410	2,37,04,160
Percentage of profit on capital .	3.28	5.42	5.30	7.58
<i>Minor works and Navigation.</i>				
(For which capital accounts are kept.)				
Capital outlay to end of year	4,19,94,031	4,63,66,510	4,95,40,500	5,30,83,600
Net revenue of year .	16,60,978	18,62,410	39,20,530	45,47,450
Percentage of profit on capital .	3.95	4.02	8.00	8.57

The annual capital outlay during the five years ending 1896-97 for all classes of works for which capital accounts are kept has averaged $87\frac{3}{4}$ lakhs of rupees.

The steady increase in the areas irrigated by all classes of Irrigation works throughout India since 1887-88 is exhibited in the following statement :

	AREAS IRRIGATED.			
	1887-88.	1891-92.	1895-96.	1896-97.
	Acres.	Acres.	Acres.	Acres.
Bengal	494,968	760,117	616,154	830,761
North-Western Provinces . . .	1,602,917	2,125,000	2,089,743	3,102,907
Punjab	2,250,081	3,067,336	3,458,544	4,164,920
Bombay	190,113	241,622	219,934	264,036
Madras	5,841,720	5,516,461	6,115,457	5,979,044
Sind	1,871,114	2,165,631	2,096,777	2,497,348
Rajputana	37,625	11,987	31,126	36,653
Baluchistan . . . . .	...	7,732	7,070	3,355
TOTAL AREAS IRRIGATED BY WORKS FOR WHICH CAPITAL ACCOUNTS ARE KEPT.	7,346,415	9,684,144	9,999,316	12,411,850
TOTAL AREAS IRRIGATED BY WORKS FOR WHICH CAPITAL ACCOUNTS ARE NOT KEPT.	4,942,123	4,211,742	4,635,489	4,467,174
GRAND TOTAL	12,288,538	13,895,886	14,634,805	16,879,024

The large increase in the area of irrigation during Lord Elgin's administration is confined entirely to works for which capital accounts are kept. The area irrigated by other Minor works has not increased at all since 1887-88.

The lengths of main and branch canals and of distributaries were as follows at the end of 1896-97 :

	Main and branch canals.	Distributaries.	
		Miles.	Miles.
Protective works		426	771
Productive works		6,970	21,943
Minor works (for which capital accounts are kept)		6,429	3,461
TOTAL	13,825	26,115	

The length of main and branch canals has been increased by 1,317 miles and the aggregate length of distributaries by 411 miles during Lord Elgin's administration. The length of navigable channels is now 2,900 miles.

RAILWAYS.

MILEAGE OF RAILWAYS.

32. *Open mileage and extensions of line sanctioned.*—At the close of 1893 or at the commencement of the Earl of Elgin's Viceroyalty, the total sanctioned mileage of railways, including 107 miles of steam tramways outside municipal limits, was 20,710 miles, of which 18,490 $\frac{1}{2}$ miles, including 53 miles of tramway, were open for traffic, leaving 2,219 $\frac{1}{2}$ miles to be completed.

Since then and up to the close of 1898, 5,385 $\frac{3}{4}$ additional miles of railway (details of which are given below) and 98 $\frac{1}{4}$ miles of tramway have been sanctioned, bringing up the total sanctioned mileage of all railways, including steam tramways, to 26,194 miles :

	Standard	Metre	Special	TOTAL.
	gauge.	gauge.	gauges, including tramways.	
	Miles.	Miles.	Miles.	Miles.
State lines worked by companies	924 $\frac{1}{2}$	933	56 $\frac{3}{4}$	1,914 $\frac{1}{4}$
State lines worked by the State	921 $\frac{1}{4}$	175 $\frac{3}{4}$	...	1,097
Lines worked by guaranteed companies	135 $\frac{3}{4}$	...	...	135 $\frac{3}{4}$
Assisted companies	693	317 $\frac{3}{4}$	101	1,111 $\frac{3}{4}$
Lines owned by native states and worked by companies	108 $\frac{3}{4}$	428 $\frac{1}{4}$	75 $\frac{3}{4}$	612 $\frac{3}{4}$
Lines owned by native states and worked by state railway agency	80 $\frac{1}{4}$	...	15 $\frac{1}{4}$	95 $\frac{1}{2}$
Lines owned and worked by native states . . . . .	...	285 $\frac{1}{2}$	118 $\frac{3}{4}$	404 $\frac{1}{4}$
Foreign lines . . . . .	...	14 $\frac{1}{2}$	...	14 $\frac{1}{2}$
Tramways . . . . .	...	...	98 $\frac{1}{4}$	98 $\frac{1}{4}$
TOTAL . . .	2,863$\frac{1}{2}$	2,154$\frac{3}{4}$	465$\frac{3}{4}$	5,484

Between the 27th January 1894 and the 1st January 1899, 3,087 $\frac{3}{4}$ miles of railway and 103 $\frac{1}{4}$ miles of tramway were opened for traffic :

	Standard	Metre	Special	TOTAL.
	gauge.	gauge.	gauges, including tramways.	
	Miles.	Miles.	Miles.	Miles.
State lines worked by companies	362	810 $\frac{3}{4}$	...	1,172 $\frac{3}{4}$
State lines worked by the State	862 $\frac{1}{2}$	79 $\frac{1}{2}$	...	942
Lines worked by guaranteed companies	1	...	...	1
Assisted companies	399 $\frac{3}{4}$	101 $\frac{3}{4}$	21 $\frac{3}{4}$	523 $\frac{1}{4}$
Lines owned by native states and worked by companies	230 $\frac{1}{4}$	...	26 $\frac{1}{4}$	256 $\frac{1}{2}$
Lines owned and worked by native states . . . . .	...	177 $\frac{1}{4}$	...	177 $\frac{1}{4}$
Foreign lines . . . . .	...	14 $\frac{1}{2}$	..	14 $\frac{1}{2}$
Tramways . . . . .	...	...	103 $\frac{1}{4}$	103 $\frac{1}{4}$
TOTAL . . .	1,855$\frac{1}{2}$	1,183$\frac{1}{2}$	151$\frac{3}{4}$	3,191

and the total open mileage on the 1st January 1899, after allowing for lines abandoned and minor corrections of mileage, was thus brought up to 21,728 $\frac{1}{4}$ miles :

	Standard	Metre	Special	TOTAL.
	gauge.	gauge.	gauges, including tramways.	
	Miles.	Miles.	Miles.	Miles.
State lines worked by companies	3,891 $\frac{3}{4}$	6,706 $\frac{1}{4}$	...	10,598
State lines worked by the State	4,636	644	28 $\frac{1}{4}$	5,308 $\frac{1}{4}$
Lines worked by guaranteed companies	2,588	...	...	2,588
Assisted companies	584 $\frac{1}{4}$	270 $\frac{1}{4}$	72 $\frac{3}{4}$	927 $\frac{1}{4}$
Lines owned by native states and worked by companies	633	188 $\frac{1}{4}$	97 $\frac{3}{4}$	919
Lines owned by native states and worked by state railway agency	123 $\frac{3}{4}$	...	22	145 $\frac{1}{4}$
Total carried over . . .	12,456$\frac{3}{4}$	7,808$\frac{3}{4}$	220$\frac{3}{4}$	20,486$\frac{1}{4}$

	Standard gauge.	Metre gauge.	Special gauges, including tramways.	TOTAL.
	Miles.	Miles.	Miles.	Miles.
Total brought forward .	12,456 $\frac{3}{4}$	7,808 $\frac{3}{4}$	220 $\frac{1}{4}$	20,486 $\frac{1}{4}$
Lines owned and worked by native states .	...	921 $\frac{1}{4}$	94 $\frac{1}{4}$	1,015 $\frac{1}{2}$
Foreign lines .	...	73 $\frac{1}{2}$	...	73 $\frac{1}{2}$
Tramways .	..	...	153 $\frac{1}{4}$	153 $\frac{1}{4}$
	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL .	12,456 $\frac{3}{4}$	8,803 $\frac{1}{4}$	468 $\frac{1}{4}$	21,728 $\frac{1}{4}$

leaving a length of 4,252 $\frac{1}{4}$ miles of railway and 34 $\frac{1}{2}$ miles of tramway to be finished, as under:

	Standard gauge.	Metre gauge.	Special gauges, including tramways.	TOTAL.
	Miles.	Miles.	Miles.	Miles.
State lines worked by companies .	729 $\frac{3}{4}$	1,084 $\frac{3}{4}$	56 $\frac{3}{4}$	1,871 $\frac{1}{4}$
State lines worked by the State .	527 $\frac{3}{4}$	96 $\frac{1}{4}$	...	624
Lines worked by guaranteed companies .	134 $\frac{3}{4}$	...	...	134 $\frac{3}{4}$
Assisted companies .	293 $\frac{1}{4}$	237	101	631 $\frac{1}{4}$
Lines owned by native states and worked by companies .	76	428 $\frac{1}{4}$	49 $\frac{1}{2}$	553 $\frac{1}{4}$
Lines owned by native states and worked by state railway agency .	80 $\frac{1}{4}$	...	15 $\frac{1}{4}$	95 $\frac{1}{2}$
Lines owned and worked by native states .	...	223	118 $\frac{3}{4}$	341 $\frac{3}{4}$
Tramways .	...	...	34 $\frac{1}{2}$	34 $\frac{1}{2}$
	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL .	1,841 $\frac{3}{4}$	2,069 $\frac{1}{4}$	375 $\frac{3}{4}$	4,286 $\frac{3}{4}$

33. *Railways and tramways sanctioned during the administration of the several Viceroys.*—The following table will show at a glance the total length of railways, including tramways, sanctioned during the administration of the several Viceroys:

	Standard gauge.	Metre gauge.	Special gauges, including tramways	TOTAL.
	Miles.	Miles.	Miles.	Miles.
The Marquis of Dalhousie (12th January 1848 to 29th February 1856)	1,799 $\frac{3}{4}$	...	...	1,799 $\frac{3}{4}$
The Earl of Canning (29th February 1856 to 12th March 1862)	1,888 $\frac{3}{4}$	166 $\frac{1}{2}$	...	2,055 $\frac{1}{4}$
The Earl of Elgin (12th March 1862 to 20th November 1863)	312 $\frac{1}{2}$	...	27 $\frac{1}{4}$	340 $\frac{1}{4}$
Sir John Lawrence (12th January 1864 to 12th January 1869)	792 $\frac{1}{2}$	17 $\frac{1}{2}$	...	810
The Earl of Mayo (12th January 1869 to 8th February 1872)	1,163	542 $\frac{1}{2}$	20	1,725 $\frac{1}{2}$
The Earl of Northbrook (3rd May 1872 to 12th April 1876)	342 $\frac{1}{2}$	855 $\frac{1}{4}$	...	1,197 $\frac{1}{4}$
The Earl of Lytton (12th April 1876 to 8th June 1880)	692 $\frac{1}{2}$	1,468 $\frac{1}{2}$	89 $\frac{3}{4}$	2,250 $\frac{3}{4}$
The Marquis of Ripon (8th June 1880 to 13th December 1884)	2,147 $\frac{1}{2}$	2,644 $\frac{1}{4}$	128	4,919 $\frac{3}{4}$
The Marquis of Dufferin and Ava (13th December 1884 to 10th December 1888)	749 $\frac{1}{4}$	1,030 $\frac{3}{4}$	50 $\frac{1}{2}$	1,830 $\frac{1}{2}$
The Marquis of Lansdowne (10th December 1888 to 27th January 1894)	1,569 $\frac{1}{4}$	2,100	111 $\frac{1}{4}$	3,780 $\frac{1}{4}$
The Earl of Elgin (27th January 1894 (in office))	2,863 $\frac{1}{2}$	2,154 $\frac{3}{4}$	465 $\frac{3}{4}$	5,484
	<hr/>	<hr/>	<hr/>	<hr/>
TOTAL .	14,321	10,980	893	26,194

PRINCIPAL RESULTS OF RAILWAY WORKING.

34. The following are some of the principal results of railway working during the years 1894 to 1897, the last for which complete figures are available for the purposes of comparison. The last column also gives the results during the 1st-half of 1898:

		1894.	1895.	1896.	1897.	First-half of 1898.
Miles open at end of year	Miles.	18,841	19,467	20,173	20,983	21,226
Mean mileage worked during the year . . .	"	18,694	19,160	19,783	20,531	21,005
Capital outlay at close of calendar year .	Rs.	2,37,79,00,823	2,44,38,04,575	2,53,16,24,453	2,59,57,39,008	2,61,40,10,155
Number of passengers booked . . .	No.	145,727,097	153,081,477	160,817,267	151,263,816	163,381,859
Tonnage of goods booked	Tons.	32,643,764	33,628,030	32,471,335	33,698,617	18,862,089
Passenger unit-mileage	Unit-miles.	5,890,138,077	6,172,966,272	6,427,608,140	5,930,946,976	2,977,618,490
Ton-mileage of goods .	Ton-miles.	4,861,763,665	4,944,796,681	4,588,716,024	4,813,836,667	3,248,481,524
Train-mileage . . .	Miles.	65,235,648	65,868,752	65,363,186	69,396,166	37,955,659
Gross earnings during the year . . .	Rs.	25,50,88,564	26,23,69,060	25,36,60,425	25,59,51,692	14,97,19,751
Working expenses during the year . . .	"	11,98,39,200	12,11,98,860	12,19,76,875	12,51,11,631	6,55,63,748
Net earnings during the year . . .	"	13,52,49,364	14,11,70,200	13,16,83,550	13,08,40,061	8,41,56,003
Percentage of net earnings on capital outlay	Per cent.	5.69	5.78	5.20	5.04	3.22
Gross earnings per mean mile worked per week	Rs.	261	261	245	238	274
Percentage of working expenses on gross earnings . . .	Per cent.	46.98	46.19	48.09	48.88	43.79

At the end of 1894, 18,841 miles of railway were opened for traffic against 20,983 miles at the end of 1897.

In 1894, the traffic work performed was, in round numbers, equivalent to 32 millions of tons of goods carried as compared with 33 millions of tons of goods carried in 1897.

The number of passengers using the railway increased from 146 millions in 1894 to 151 millions in 1897. The result would have been more favourable had not famine and plague restrictions prevented the public from travelling and the earthquake of 12th June 1897 suspended traffic on some of the railways in Bengal and Assam in 1897. The abnormal passenger traffic results in 1896 may be attributed to the general development of traffic and to the reduction of 3rd class fares on certain railways. To convey this traffic, 65 million train-miles were run in 1894 as compared with 69 million train-miles in 1897.

PRINCIPAL EVENTS.

35. Among the principal events may be noticed the following:

36. *Land Acquisition Act, I of 1894.*—On the 2nd February 1894, an Act to amend the law for the acquisition of land for public purposes and for companies was passed into law as Act I of 1894.

37. *Act conferring powers on the East Indian Railway Company to enter into contracts for the construction and working of extensions or branches and to borrow or raise money for the general purposes of the undertaking.*—The Board of the East Indian Railway Company made several representations to the Secretary of State

on the subject of the inadequacy of the funds provided year by year for expenditure on improvements and extensions of their system, and ultimately they requested the Secretary of State to permit them to make application to Parliament for an Act to enable the company, with the sanction of the Secretary of State, to raise money for the purposes of the undertaking. In despatch No. 96 Railway, dated 20th December 1894, the Secretary of State intimated that he had decided not to withhold his assent to the company applying to Parliament, and in despatch No. 48 Railway, dated 13th June 1895, the Secretary of State further intimated that the Bill had

Despatch No. 36 Railway, dated 19th April 1894, from Secretary of State.
 Despatch No. 69 Railway, dated 6th September 1894, from Secretary of State.
 Despatch No. 96 Railway, dated 20th December 1894, from Secretary of State.
 Despatch No. 13 Railway, dated 14th February 1895, from Secretary of State.
 Despatch No. 22 Railway, dated 7th March 1895, from Secretary of State.
 Despatch No. 48 Railway, dated 13th June 1895, from Secretary of State.
 Despatch No. 70 Railway, dated 15th August 1895, from Secretary of State.
 Despatch No. 15 Railway, dated 19th February 1896, to Secretary of State.
 Despatch No. 2 Railway, dated 13th January 1898, from Secretary of State.

become law, having received the Royal Assent.

This Act empowers the East Indian Railway Company, with the sanction of the Secretary of State, to borrow or raise money for the general purposes of the undertaking by the creation and issue of debentures, with the guarantee of the Secretary of State, or by the creation and issue of debenture stock, redeemable, or irredeemable, with the guarantee of the Secretary of State, for such amount and bearing such interest and subject to such terms and conditions as may be approved by the Secretary of State.

The Act also gives the company the power, with the sanction of the Secretary of State, to enter into contracts with any persons for the construction, by the company or by any other company or person, out of moneys to be provided by any such persons, of railways and works in extension of or in connection with the undertaking, and for the maintenance, working and use by the company of any railway and works in extension of or in connection with the undertaking.

Under the powers conferred by the Act, the East Indian Railway Company has raised the following sums by the issue of debentures :

	£	Rs.
July 1895	. . . . .	150,000 = 27,16,981
June 1896	. . . . .	300,000 = 55,49,434
March 1897	. . . . .	500,000 = 88,07,572
February 1898	. . . . .	600,000 = 98,06,845
	<hr/>	<hr/>
	1,550,000	= 2,68,80,832
	<hr/>	<hr/>

Subsequent to the passing of the Act, correspondence took place between the Secretary of State and the Government of India relative to the method by which effect should be given to the powers obtained by the East Indian Railway Company for raising money for the purpose of extensions of the undertaking, and in despatch No. 15 Railway, dated 19th February 1896, the Government of India communicated their views on the subject, which were briefly that borrowing in England by the East Indian Railway Company should not be regarded as admissible beyond the extent to which borrowing by the Secretary of State for railway purposes would be, and that it should not be laid down as a rule that the whole capital expenditure of the company should be provided by borrowing either by the company or the State, because it may be more convenient for Government to advance funds rather than to create sterling debt or special debt for the purpose ; further that the East Indian Railway Company should not be allowed to borrow in the Indian market in rupee currency.

38. *Indian Railway Companies Act, X of 1895.*—In 1895 an Act to provide

Despatch No. 62 Railway, dated 2nd August 1894, from Secretary of State. for the payment of interest out of capital during construction by railway companies

registered under the Indian Companies Act, VI of 1882, was passed into law as the Indian Railway Companies Act, X of 1895.

39. *Indian Railways Amendment Act, IX of 1896.*—In March 1896 an Act to amend certain sections of the Indian Railways Act of 1890, including the repeal of section 81 of that Act, was passed into law as Act IX of 1896.

40. *Transfer of the Burma railways to a company.*—Considerable correspondence took place between the Government of India and the Secretary of State in connection with proposals received for the formation of a company to take over the working and construction of extensions of the Burma railways, and ultimately an agreement was entered into between the Secretary of State and the Burma Railways Company under which the company took over the Burma railways from the 1st September 1896 on the undernoted conditions :

- (i) The capital of the company to be £2,000,000 with power to raise further capital required with the Secretary of State's sanction by the issue of shares or by debentures or by loan from Government.
- (ii) The capital of the Secretary of State to be represented by the sterling equivalent, at the rate of 1s. $2\frac{3}{16}d.$, of the capital expended in rupees by the Secretary of State on the railways of the undertaking up to the date of their transfer to the company.
- (iii) Interest at the rate of $2\frac{3}{4}$ per cent. up to the 1st July 1901, and thereafter at the rate of $2\frac{1}{2}$ per cent. on the capital of £2,000,000, to be payable half-yearly to the company in London.
- (iv) The net revenue receipts for each half-year to be applied in the first instance in repayment to Government of the guaranteed interest on the capital raised by the company by shares, debentures, or loan and in payment to Government of interest at $2\frac{1}{2}$ per cent. on the sterling equivalent of the Secretary of State's capital.
- (v) Any surplus of the net revenue receipts over these interest charges for periods commencing on the 1st July and ending on the 30th June to belong as four-fifths to the Secretary of State and one-fifth to the company ; the company to repay out of their one-fifth share of surplus profits the extra $\frac{1}{4}$ per cent. interest guaranteed up to the 1st July 1901.

41. *Transfer of the working of the Bengal Central railway.*—The working of the Bengal Central railway was taken over from the Eastern Bengal State railway by the Bengal Central Railway Company from the 1st January 1897.

42. *Question of continuing the working of the East Indian railway undertaking by agency of the company.*—In despatch No. 84 Railway, dated 11th August 1897, the Government of India communicated to the Secretary of State their views on the question of continuing the working of the East Indian railway undertaking

Despatch No. 13 Railway, dated 4th February 1897, from Secretary of State.

Despatch No. 84 Railway, dated 11th August 1897, to Secretary of State.

by the agency of the present company, in view of the fact that notice had to be given on or before the 31st December 1897 if it was desired to terminate the contract on the

31st December 1899, the earliest date on which it could be terminated. The Government of India agreed with the Secretary of State that the result of the working of the railway by the company under the existing contract had been so far satisfactory that the general principles of the contract might remain unaltered, and that certain modifications of minor matters and in the direction of securing greater powers of control to Government over working arrangements were all that were necessary. The matter is at present under settlement between the Secretary of State and the company.

43. *Improvement in the mail service between Calcutta and Bombay.*—An accelerated mail service between Calcutta and Bombay was arranged for in 1897 and resulted in reducing the journey by 11 hours.

44. *Plague and famine, and famine relief works.*—In spite of the outbreak of plague and famine in 1896-97, it has been found possible to carry out an average programme of public works, and construction works on railways have come to the rescue in supplying an outlet for famine relief. The principal railways also made large reductions in rates in order to stimulate the movement of food-grains, as shewn in paragraph 113, and thus the distress in many parts of the country was greatly relieved.

Owing to the bubonic plague, which first broke out in Bombay in 1896, the Contagious Diseases Act, III of 1897, was passed by the Government of India,

under which inspection stations with the necessary staff and segregation camps were established at suitable places on railways. Special instructions were issued for the examination of passengers travelling from infected areas to other parts of India and for the disinfection of their luggage and of the railway carriages occupied by them.

45. Terms for the continuance of the working of the Rajputana-Malwa railway system by the Bombay, Baroda and Central India Railway Company.—As the con-

Despatch No. 51 Railway, dated 23rd June 1898, tract with the Bombay, Baroda and Central from Secretary of State. India Railway Company for the working and maintenance of the Rajputana-Malwa railway and connected lines terminates on the 30th June 1900, the question as to the agency to be employed after that date in working these lines has been under consideration. The Bombay, Baroda and Central India Railway Company are desirous of continuing the working of the lines up to the time their principal contract falls in, *viz.*, in 1905, and have submitted the following proposals for working during that period :

- (i) The net earnings of the Rajputana-Malwa railway system to belong absolutely to Government, the company surrendering all claims to share, as they have hitherto done, in the surplus profits of the system.
- (ii) The working expenses of the Bombay, Baroda and Central India railway and of the Rajputana-Malwa railway system to be kept in one combined account and divided between the company's line and the State lines in such a manner that the State lines will be charged at a rate representing 4 per cent. of their gross earnings higher than the rate charged to the company's line.

These proposals, which were received with Secretary of State's despatch No. 51 Ry., dated 23rd June 1898, for the views of the Government of India, are still under consideration, the views of the Government of Bombay having been asked for in the first instance.

46. Working of the Southern section of the East Coast State railway, including the Bezwada-Madras State railway.—The terms proposed by the Government of India for working a portion of the East Coast State railway south of Vizianagram, including the Bezwada-Madras State

Despatch No. 86 Railway, dated 11th August 1897, to Secretary of State.

Despatch No. 35 Railway, dated 5th May 1898, from Secretary of State.

Despatch No. 72 Railway, dated 3rd November 1898, to Secretary of State.

gram, including the Bezwada-Madras State railway, by the agency of the Madras Railway Company not having been accepted by the latter, it has been decided, on economical grounds, to continue to work

the line by State agency for the present. The further consideration of the question has accordingly been postponed till the connection with Calcutta is established; by which time the traffic on the Southern section of the East Coast State railway will be more developed, the percentage of working expenses to gross earnings may have improved sufficiently to remove the objection of the Madras Railway Company to the proposed terms, and the Government of India will be in a better position altogether to judge what arrangements will be fair and most convenient for the future working of the line.

IMPORTANT RAILWAY WORKS COMPLETED AND IN PROGRESS.

47. The following remarks give a fair idea of the important works which have been completed or nearly so :

Bengal.

48. Extensions of the Bengal-Nagpur railway and working of the Northern section of the East Coast State railway.—In despatch No. 16 Railway, dated

Despatch No. 27 Railway, dated 22nd March 1894, from Secretary of State.

Despatch No. 16 Railway, dated 13th March 1895, to Secretary of State.

Despatch No. 17 Railway, dated 28th February 1895, from Secretary of State.

Despatch No. 49 Railway, dated 13th June 1895, from Secretary of State.

Despatch No. 93 Railway, dated 19th September 1895, from Secretary of State.

Despatch No. 64 Railway, dated 23rd July 1896, from Secretary of State.

Despatch No. 92 Railway, dated 1st September 1897, to Secretary of State.

13th March 1895, the Government of India, with a view to effect a separate entry into Calcutta, submitted proposals to the Secretary of State for the construction of extensions of the Bengal-Nagpur railway from Sini through Midnapore to Howrah, with a branch from Midnapore to Cuttack. It was suggested that the construction and working of these lines should be entrusted to the Bengal-Nagpur Railway Company, and that the working of a portion of the

East Coast State railway from Cuttack to Vizianagram should also be made over to that company. These proposals were approved by the Secretary of State in despatch No. 49 Railway, dated 13th June 1895. Subsequent correspondence took place regarding the proposed terms for working, and in despatch No. 92 Railway, dated 1st September 1897, the Government of India informed the Secretary of State that they were prepared to accept the terms proposed by the Directors of the Bengal-Nágpur Railway Company as fair and reasonable. These terms are as follows :

That the net earnings of the whole system, *viz.*, the Bengal-Nágpur railway, the Sini-Midnapore-Calcutta extension and the section from Cuttack to Vizianagram, be applied, in the first place, to meet the interest charges both on the company's share capital and debentures and on the Government capital expended on the Cuttack-Vizianagram section, and that in any year in which there is any excess of net earnings over these interest charges three-fourths of the residue to be retained by Government, the remaining one-fourth being divided between the Government and the company in proportion to the capital contributed by each, or as an alternative, in proportion to the gross earnings of the company's system and of the Cuttack-Vizianagram section.

Considerable progress has been made with the extensions, and it is expected that the lines will be opened throughout early in 1900. The extensions aggregate 365 miles and include some very heavy bridging.

49. *Extensions of the East Indian railway.*—The East Indian railway have

Despatch No. 10 Railway, dated 1st February 1894, from Secretary of State.

Despatch No. 28 Railway, dated 22nd March 1894, from Secretary of State.

also extensions in hand, notably the Moghal Sarai-Gya-Luckeeserai chord, with extensions into the coal-fields by means of the Bárán-Daltongonj branch.

The extensions of the Toposi colliery branch of the East Indian railway,

Despatch No. 65 Railway, dated 23rd July 1896, from Secretary of State.

viz., from Toposi to Khorabad, Nandi to Panuria, and from Salanpur to Jamgram, have been opened for traffic.

50. *Extensions of the Bengal and North-Western railway.*—The Bengal and North-Western Railway Company have nearly completed their metre gauge extensions north of the Ganges connecting the Tirhoot State railway at Hajcepore with the Northern section of the Eastern Bengal State railway at Katihár, 170 miles,—a link in the chain of the metre gauge communication between the North-Western Provinces and Assam, which will be still further advanced when the bridge over the Teesta, 13 spans of 150-foot girders, is constructed by the Eastern Bengal State railway.

51. *Doubling of a portion of the Eastern Bengal State railway.*—The increased traffic, goods and passengers, on the standard gauge section of the Eastern Bengal State railway has necessitated the doubling of the line throughout to Porádaha; extensions on both gauges aggregating 167 miles have been completed or nearly so.

52. *Bengal Dooars and Cooch Behar railways.*—The metre gauge section of the Eastern Bengal State railway system north of the Ganges, has had linked to it the Bengal Dooars railway, worked by a company; and His Highness the Maharaja of Cooch Behar is extending the railway through his State, passing into British territory at the foot of the Himalayas below Buxa.

North-Western Provinces and Oudh.

53. *Linking up of some metre gauge railways in Northern India.*—Work on

Despatch No. 22 Railway, dated 1st March 1894, from Secretary of State.

Despatch No. 34 Railway, dated 5th June 1894, to Secretary of State.

Despatch No. 77 Railway, dated 25th October 1894, from Secretary of State.

Despatch No. 98 Railway, dated 20th December 1894, from Secretary of State.

Despatch No. 64 Railway, dated 8th August 1895, from Secretary of State.

the scheme for the linking up of certain metre gauge railways in Northern India including a permanent bridge (17 spans of 200 feet) over the Gogra river at Bahramghat was started in 1894. The length from Cawnpore to Burhwal was opened for traffic on the 15th May 1897, and the bridge will probably be completed by January 1899.

54. *Rae Bareli-Benares chord of the Oudh and Rohilkhand State railway.*—The Rae Bareli-Benares railway was opened for traffic in April 1898, and forms a chord to the Oudh and Rohilkhand State Railway between Lucknow and Benares.

55. *Cawnpore Junction.*—Cawnpore has developed into a very large railway centre, second only to Calcutta and Bombay, and has the East Indian, Indian Midland and Oudh and Rohilkhand standard gauge and the Rajputana-Malwa and Oudh and Rohilkhand metre gauge lines all seeking accommodation for goods and passenger traffic.

56. *Agra-Delhi chord line (standard gauge).*—In connection with a direct route to Bombay *via* Muttra-Bara-Nágdá, a survey of a chord line from Agra *via*

Despatch No. 47 Railway, dated 4th August 1898, to Secretary of State.

Despatch No. 81 Railway, dated 15th September 1898, from Secretary of State.

Muttra to Delhi has been carried out, and the sanction of the Secretary of State to the construction of the line has been obtained. Pending the decision as to the

construction of the Nágdá-Bara-Muttra portion, work may, however, perhaps not be commenced just yet.

Punjab and the North-West Frontier.

57. *Southern Punjab railway and Delhi Junction.*—The Southern Punjab Railway Company have completed and opened for traffic a line of 400 miles, fringing the Bickaneer desert, between Samásata and Delhi, which is now the shortest link between the North-West Frontier and Delhi. Delhi is now a very important railway centre, no fewer than eight railways passing through it.

58. *Wazirabad-Lyallpur railway and extension.*—North of Lahore, the seat of the Punjab Government, the Wazirabad-Lyallpur railway, 96 miles, was completed in February 1896, and an extension from Lyallpur of 105 miles is in progress.

59. *Regrading portions of the North Western State railway.*—Regrading portions of the North Western State railway between Jhelum and Ráwlpindi has now been completed.

60. *Mari-Attock State railway.*—The Mári-Attock State railway, which completes the chain of communication along the east bank of the river Indus from Sukkur to Ráwlpindi and Pesháwar, 80 miles in length, has been pushed forward and will be opened for traffic early in 1899.

61. *Mushkaf-Bolan State railway.*—The Mushkaf-Bolan State railway, 86 miles, strengthening the communication between the plains of India and the cantonment of Quetta, was completed at the close of the year 1895, and 25 miles of the steepest portion of the line doubled in April 1897.

Sind.

62. *Doubling of a portion of the North Western State railway; Indus bridge at Kotri.*—The North Western State railway has found it necessary to double 108 miles of line northwards from Kiámári to Kotri, where a large bridge over the river Indus, consisting of 5 spans of 350 feet and 1 span of 100, and its approaches are in progress. It will be opened in June 1899.

63. *Kotri-Rohri chord line of the North Western State railway.*—A railway, 179 miles in length, from Kotri and following the left bank of the river Indus to opposite Sukkur, was completed and opened for traffic in December 1896.

Rajputana, Central India and Central Provinces.

64. *Shadipalli-Balotra railway.*—A length of 204 miles of line on the metre

Despatch No. 82 Railway, dated 19th August 1897, from Secretary of State. gauge is under construction from Shadipalli to Balotra in Rajputana, and when opened

will connect the Rajputana-Malwa metre gauge system of the Bombay, Baroda and Central India railway with the North Western State railway, 108 miles from Kiámári.

65. *Short standard and metre gauge connections with the Indian Midland and Bombay, Baroda and Central India railway systems.*—Of the short lengths of such lines, the following may be mentioned as completed or nearly so :

									Miles.
Oodeypore-Chitor	.	.	.	.	.	.	.	.	6 $\frac{1}{4}$
Debari-Oodeypore	.	.	.	.	.	.	.	.	6 $\frac{1}{2}$
Bína-Goona	.	.	.	.	.	.	.	.	7 $\frac{1}{4}$
Bhopal Ujjain	.	.	.	.	.	.	.	.	11 $\frac{3}{4}$
Godhra-Rutlam	.	.	.	.	.	.	.	.	115
Rutlam-Ujjain	.	.	.	.	.	.	.	.	60 $\frac{1}{2}$
Goona-Bara	..	.	.	.	.	.	.	.	73 $\frac{3}{4}$
Saugor-Katni	.	.	.	.	.	.	.	.	116
Gwalior-Sipri	.	.	.	.	.	.	.	.	73 $\frac{1}{4}$

Hyderabad and Bombay.

66. *Hyderabad-Godávari Valley railway.*—Work on the railway of His Highness the Nizam of Hyderabad (Hyderabad-Gódávari Valley railway) is advancing towards completion. This railway, 389 miles in length, connects the Great Indian Peninsula railway at Manmád *viá* the Gódávari Valley with Secunderabad.

67. *Ahmedabad-Parantíj-Idar-Ahmednagar branch railway.*—This line, ex-

Despatch No. 58 Railway, dated 2nd August 1894, from Secretary of State.

Despatch No. 30 Railway, dated 4th April 1895, from Secretary of State.

tending from Ahmedabad *viá* Parantíj to Idar-Ahmednagar, 54½ miles, was opened for traffic in sections during 1897.

68. *Tápti Valley railway.*—Work is in progress on the Tápti Valley railway

Despatch No. 56 Railway, dated 11th July 1895, from Secretary of State.

from Surat *viá* Nandurbar to Amalner, 157 miles in length.

69. *Short lengths of lines constructed in the provinces.*—Short lengths of line—Jámnagar railway (54½ miles), Anklesvar-Raj Pardi Section of the Rajpipla railway (19 miles), and Dhrángadrá railway (21 miles)—have been opened for traffic.

Madras and Southern India.

70. *Bezwada-Madras railway; railway communication between Calcutta and Madras; Godávari bridge at Rajahmundry.*—Communication along the coast line from the north will shortly be opened between Bezwada and Madras, 254 miles, partly by the construction of new lines and partly by conversion of metre to standard gauge. This, when the Gódávari bridge, now under construction on the East Coast State railway at Rajahmundry, and the Bengal-Nágpur railway extension from Barang to Calcutta are completed, will establish through railway communication between Madras and Calcutta. The Gódávari bridge is now in progress and aggregates some 8,900 feet in length. It consists of 56 spans of 150-foot girders supported on masonry piers and wells sunk down to the solid below the river bed.

71. *Kolar Gold-fields railway.*—The Kolar Gold-fields railway, 10 miles, was opened for traffic in June 1894.

Assam.

72. *Assam-Bengal railway.*—At the beginning of the year 1897, 254·28 miles of the main line of the Assam-Bengal railway from Chittagong to Badarpur and 106·35 miles of branches were open for traffic, 56 miles of branches being well advanced. The earthquake of 1897, however, seriously damaged the open line, as also certain sections under construction, and necessitated the closing of 129 miles of the main line and 74 miles of a branch. The main line has been re-opened to Badarpur, the Gauhati-Jamuna Mukh section is expected to be re-opened by the beginning of 1899; and it is probable that the branch to Silchar will be ready for opening by the middle of that year.

Burma.

73. *Mandalay-Kunlon extension of the Burma railways.*—The Mandalay-Kunlon extension of the Burma railways is in progress for the first 180 miles, and will probably be opened throughout early in 1899.

RAILWAY LINES UNDER SURVEY OR RECONNAISSANCE.

74. The following remarks also give a fair idea of the several railway projects which have been surveyed or reconnoitred, or are now in course of survey, but which have not yet been sanctioned for construction :

Bengal.

75. *Ranaghat-Bhagwangola-Raeganj branch.*—With a view to tapping the rich valley of the Bhagiruthee and effecting a connection with the Bengal and North-Western and Eastern Bengal State railways, surveys are in progress for a line running north from Ránaghat *viá* Bhagwangola crossing the Ganges and thence on to Raeganj with a branch to Katihár. The most suitable site for a bridge over the Ganges is under consideration.

76. *Kissengunge-Kotchandpur-Magura branch (2' 6" gauge).*—Proposals were made by a branch line company for a railway from Kissengunge *via* Kotchandpur to Magura and surveys have been made, but a decision on the proposals awaits the result of further surveys for the alternative line put forward by the Bengal Central Railway Company from Bongong to Kotchandpur.

77. *Goalundo-Narayanganj extension.*—A reconnaissance has been carried out by the Eastern Bengal State railway of this extension, which has been proposed with the object of connecting Calcutta with the Assam-Bengal railway.

78. *Midnapore-Jherriah and Ranchi Plateau surveys.*—Detailed plans and estimates of the various feeder lines for the extensions of the Bengal-Nágpur railway between Midnapore and Jherriah, with a view to tapping the coal-fields and to give another outlet to Calcutta, have been submitted.

A survey for a standard gauge line from Chatatand, on the Ádra-Jherriah alignment referred to above, to some point on the proposed Palamow-Sini line, a length of 115 miles, and a reconnaissance for a 2-foot gauge line from Tori to Aringi *via* Lohardugga with a branch to Ranchi, 80 miles, are now in hand. These railways, if constructed, will form protective lines for the Ranchi Plateau in time of famine.

79. *Satpura Plateau railway.*—The district in the neighbourhood of the Satpura Plateau suffered severely from famine in 1896 for want of railway communication, and surveys are now in progress for a line from Gondia, on the Bengal-Nágpur railway, to Jubbulpore, with branches to Mandla on the east and to Seoni and Chindwara on the west, a total length of about 220 miles.

80. *Burdwan-Howrah chord and quadrupling between Sitarámpur and Howrah.*—The best means of relieving the traffic near Calcutta has been receiving attention for some time now, and a reconnaissance has been carried out for a chord line, about 58 miles in length, from Burdwan to Howrah; and an investigation is also being made of the cost of quadrupling the line between Sitarámpur and Howrah, $137\frac{3}{4}$ miles.

81. *Bhagalpur-Bausí-Baidyanath railway (standard gauge).*—A concession has been granted to Sir W. B. Hudson, under branch line terms, for a line from Bhágalpur *via* Bausí to Ahmadpur, with a branch to Baidyanáth, and a location survey has been made and estimates prepared by sections—

- (i) Bhágalpur-Noni Hat.
- (ii) Noni Hat-Ahmadpur.
- (iii) Noni Hat-Baidyanáth.

A further survey is now in hand for obtaining a more direct route between Bausí and Baidyanáth.

North-Western Provinces and Oudh.

82. *Kichha-Kashipur extension.*—The survey for an extension from Kichha to Kashipur, a length of 40 miles, which it may be considered desirable to build for the further development of the traffic of the Rohilkund and Kumaon railway, has been completed, and the project is awaited.

Punjab.

83. *Nowshera-Dargai branch and Khyber (Peshawar-Landi Kotal) railway.*—With a view to meeting the heavy demands for transport during military operations on the frontier, the question of laying down light railways has been under consideration, and surveys have been carried out during 1897-98 for a narrow gauge railway from Nowshera to Dargai, a distance of about 42 miles, and one from Pesháwar to Landi Kotal, 33 miles.

Rajputana.

84. *Rewari-Phulera chord line (metre gauge).*—The investigation of a chord line to the Rajputana-Malwa railway in the north to relieve the present congestion

of traffic has been taken in hand. The field work of a survey from Rewari to Phulera with a branch to Kucháman Road has been completed, and the detailed project is awaited.

Central India.

85. *Nagda-Bara-Mutra railway (standard gauge).*—This railway, besides opening out a new tract of country, would form a second chord line of communication to Bombay and relieve the con-

gestion of traffic on the Rajputana-Malwa railway. The total length of the projected railway is about $381\frac{1}{4}$ miles; but of this length, the first section of $25\frac{1}{2}$ miles, from Rutlam to Nágdá, has been constructed and opened to traffic. During 1895-96, the surveys of the entire project were completed.

86. *Mutra-Agra and Aligarh branches (standard gauge).*—In conjunction with the survey of the Nágdá-Bara-Mutra line, a branch line from Muttra to Agra, $31'81$ miles, and an extension from Muttra to Aligarh were also surveyed.

A reconnaissance was also carried out from Joar to Bándikui, in connection with an alternative proposal to reach Delhi on the standard gauge, which might be effected by the conversion of the existing metre gauge track between Bándikui and Delhi to the standard gauge.

Bombay.

87. *Baroda-Godhra chord line (standard gauge).*—A reconnaissance for a chord line, 44 miles in length, from Baroda to Godhra, was first made in 1891, and a further survey of the line was carried out in 1896-97 by the Bombay, Baroda and Central India Railway Company with the object of not only saving distance on the through connection if the Nágdá-Bara-Mutra line be built, but of also providing an alternative route in the event of damage by floods at the bridges over the Mahi at Vásad and Sevalia.

88. *Bombay-Sind connection railway (standard gauge).*—The revival of the question of the connection between Bombay and Sind led to the re-survey in 1897-98 of the section between Bhúj and Moghul Bhín in Sind of the proposed line from Viramgám to Hyderabad. The total length is about 345 miles and the portion re-surveyed about 130 miles.

Madras.

89. *Shoranur-Cochin railway (standard gauge).*—This line was surveyed by the Madras Railway Company in 1894-95 and a detailed project prepared. The final location of this railway, which will be about 73 miles in length, is now in hand, and negotiations for its construction as a light railway by the Cochin Durbar are in progress.

90. *Tinnevelly-Quilon railway (metre gauge).*—Surveys for this railway, the total length of which would be about 103 miles, of which about 46 miles are in British territory and 57 in the Travancore State, have been carried out and estimates submitted. The line would open up Travancore territory, and connect it with the South Indian railway system on one side and the sea on the other, but the questions of construction and the method of financing it are still under consideration, being somewhat bound up with the Madura-Pambán project.

91. *Madura Pamban railway (metre gauge).*—The survey of this line, 102 miles in length, and the preparation of the project was completed in 1894-95. The line extends from Madura, a station on the South Indian railway, to Toni Tora, a small village on the coast of the main land opposite to Pambán, which is situated on Ramesvaram Island. Palks Strait, which lies between, is here only about a mile wide: the railway would therefore form part of a possible line of connection between India and Ceylon. Negotiations for its construction under the auspices of the South Indian Railway Company are in progress.

92. *Coonoor-Ootacamund extension.*—The extension of the Nilgiri railway from its present terminus Coonoor to Ootacamund, a distance of $11\frac{1}{2}$ miles, is under consideration. It is proposed to adopt a "rack" on the greater portion of the extension.

93. *East Coast State railway branches (standard gauge).*—The survey for a feeder line from Vizianagram *via* Bobbili to Parvatipur, 49 miles, with a branch from Bobbili to Salur, 11 miles, which was undertaken in October 1894, was completed in August 1895, and plans and estimates for the project prepared. An alternative route from Chípurupalle to Bobbili, 25 miles, was also examined. The results of both were generally favourable, and the project may form part of, or be superseded by, the larger scheme for a line from Vizianagram to Raipur which has lately been surveyed.

94. *Raipur-Vizianagram railway (standard gauge).*—A further examination has been made of a line which will connect the Bengal-Nágpur and East Coast State railway systems and at the same time complete a direct broad gauge route to the East Coast. The line will further open up country at present rather destitute of communication and be of famine protection value. The preliminary report of the latest survey from Raipur to Vizianagram, which was carried out during the cold weather of 1897-98, gives the length as 304 miles. The climate is extremely unhealthy, and the staff suffered severely from fever and dysentery.

Assam.

95. *Assam-Burma connection railway (metre gauge).*—During the first-half of 1894-95, the project for that portion of the Chittagong-Akyab-Minhla alignment between Minhla and the summit of the Aeng pass was completed and submitted to Government, and a reconnaissance was made of an alignment from the Dhansiri Valley in Assam, through the Nágá hills and Manipur, connecting with the Mu Valley railway at some point north of Shwebo.

The report of a survey for a third possible route from Ledo (the terminus of the Dibru-Sadiya railway) *via* the Patkoi Pass and Hukong Valley to Mogaung, was completed at the close of the year 1894-95, and showed, as was expected, that this is the most feasible route of the three examined. But the question of connecting Assam with Burma is for the present in abeyance.

96. *Assam-Bengal railway system (metre-gauge).*—With a view to extensions of this railway, the company have carried out reconnaissances in connection with the following proposed branches :

- (i) Akhaura-Bhairab Bazar, 19 miles.
- (ii) Hajiganj-Shatnol, 25 miles, as a part of a projected connection between the Eastern Bengal State and Assam-Bengal railway systems.
- (iii) Tilágaon or Hingajea-Sylhet, 35 miles.
- (iv) Láksám-Noakhali-Ichakhali, 39 miles.

The question of further surveys during 1898-99 is under consideration.

Burma.

97. *Thibaw-Mone extension.*—A length of 50 miles of the proposed extension from Thibaw to Moné has been located southwards from Thibaw, and preliminary surveys and reconnaissance work completed as far as Keshi-Mansam, 1 mile 85. The results are awaited.

98. *Thonze-Bassein-Henzada extension.*—The line from Bassein to Henzada was partially surveyed in 1884. A detailed survey has been sanctioned and is now being carried out by the Burma Railways Company.

Surveys of lesser importance.

99. In addition to the above surveys, the following projects of lesser importance were surveyed or reconnoitred during the years 1894 to 1898 :

Railway.	Length. Miles.	Estimated cost. Rs.
1. Assam-Bengal and Dibrú-Sadiya connection	30	30,00,000
2. Saidpur-Titaliya	66	29,84,000
3. Nattore-Rámpur Beaulia	22	11,15,000
4. Phulbári-Samjhia	13	4,42,000
5. Hooghly-Cutwa	61	53,63,000
6. Burdwan-Cutwa	34	22,56,000
7. Bongong-Kotchandpur	30	24,00,000
8. Singia-Madaripur-Chandpur	82	1,92,66,000
9. Rungpore-Dhubri-Gauháti	200	2,00,00,000
10. Cossipore extension	6	3,00,000
11. Sakri-Jainagar	29	10,80,000
12. Bairagnia-Bagaha	13	45,50,000
13. Mansi-Bháptiáhi	85	51,00,000
14. Shikarpur-Munshigánj	40	20,00,000
15. Bareilly-Soron	63	53,60,211
16. Rámpur-Rámnanagar	52	25,00,000
17. Hápur-Meerut	20	10,97,000
18. Gurmukteswar-Meerut	29	17,62,000
19. Shikohabad-Farukhabad	66	45,20,000
20. Harpálpur-Rath Harpálpur-Nowgong	45	6,64,000
21. Ballia-Ghazipur	33	15,64,000
22. Aunrihar-Jaunpur	33	12,92,000
23. Barhaj-Rapti	3	1,20,000
24. Ludhiána-Ferozepore	76	43,75,865
25. Umballa-Patiala	26	27,91,153
26. Jullundur-Hoshiarpur	24	16,87,000
27. Jullundur-Kapurthala	13	6,03,000
28. Lunkaransar-Suratgarh	63	12,71,300
29. Surpura-Bickaneer	25	5,00,000
30. Bara-Kotah	42	34,88,000
31. Mahánadi bridge near Sambalpur	...	6,00,000
32. Raipur-Sonpur	148	1,22,76,130
33. Sábarmati-Dholka	33	11,98,000
34. Báhádarpur-Songir	9	4,57,505
35. Pátan-Kherálu	38	19,00,000
36. Petlád-Cambay	19	11,00,000
37. Chausama-Bechraji Mota	17	8,00,000
38. Pandharpur-Sangola	17	17,20,000
39. Arsikere-Hassan-Mangalore	138	1,86,88,000
40. Negapatam-Nagore	5	2,61,000
41. Najangúd-Erode	110	88,00,000
42. Mudgere-Sivasamudram	28	15,00,000
43. Cuddalore-Pondicherry	14	7,00,000
44. Vijapur-Kadi	42	21,00,000
45. Cannanore-Baliapatam	5	2,50,000

IMPORTANT DESPATCHES, MEASURES, ETC., RELATING TO RAILWAYS.

100. *Railway Conference.*—In order to further the development of the railway

Despatch No. 76 Railway, dated 4th November 1895, to Secretary of State.

Despatch No. 8 Railway, dated 28th January 1897, from Secretary of State.

Despatch No. 114 Railway, dated 28th October 1897, to Secretary of State.

Despatch No. 68 Railway, dated 20th October 1898, to Secretary of State.

system in India, on the basis of a comprehensive and well-considered programme, and to arrange a procedure for dealing with the subject in a more systematic manner than heretofore, a Conference of representatives of the various departments of the Government of India interested in railway

construction, assembled in Simla in September 1896, August and September 1897, and in August 1898, His Excellency the Viceroy being President. The Conference considered the recommendations of the several Local Governments and Administrations and Chambers of Commerce in regard to the railways projected, and recorded its views upon the merits of the various projects as a guide to the order in which they should receive consideration by the Public Works Department, subject to the ordinary rules of business.

101. Famine protective railways.—With the view to perfecting railway communication between areas liable to famine and the ports or granaries of the country, so that such communication might constitute the first line of defence in a famine campaign, the views of Local Governments in regard to the construction of additional famine protective railways, to supplement those already completed, or which will be completed within the next few years, were also considered.

102. Light commercial feeder lines and military light and hill railways.—The Conference of 1897 also discussed the question of the merits of light commercial feeder lines and military light and hill railways and the gauge which should be adopted for them. The recommendations were that a two-foot gauge

Despatch No. 121 Railway, dated 11th November 1897, to Secretary of State. should be adopted for military and hill railways, also for feeders to standard gauge railways, and that all feeders to metre gauge railways should, except under extraordinary conditions, be on the parent gauge. With these conclusions the

Despatch No. 57 Railway, dated 7th July 1898, from Secretary of State. Government of India agreed, and the Secretary of State has recognised the advantages of maintaining an uniform gauge for light

railways in rough and mountainous districts, whether for commercial or military purposes, but has suggested for consideration the adoption of 2 feet 6 inches as the normal gauge for military requirements. As, however, the subject is still in an experimental stage, no definite rule has yet been laid down.

103. Construction of branch lines in India by the agency of companies.—As the

Despatch No. 61 Railway, dated 2nd August 1894, from Secretary of State.

Despatch No. 85 Railway, dated 15th November 1894, from Secretary of State.

Despatch No. 89 Railway, dated 29th November 1894, from Secretary of State.

Despatch No. 29 Railway, dated 28th March 1895, from Secretary of State.

Despatch No. 78 Railway, dated 9th October 1895, to Secretary of State.

Despatch No. 9 Railway, dated 6th February 1896, from Secretary of State.

Despatch No. 43 Railway, dated 2nd June 1896, to Secretary of State.

terms offered by the Government of India in September 1893 and March 1895 for the construction, by the agency of private companies, of feeder lines to the existing main or trunk lines failed in sufficiently attracting capital from the public, they were revised in 1896.

The revised terms are restricted to branch lines and smaller extensions, larger extensions and mountain branches being dealt with on their merits; and allow to investors a guarantee from Indian reve-

nes, not exceeding 3 per cent. on the rupee capital expenditure, *plus* some share of surplus net profits, with an alternative offer of such a return from the net earnings of the main line on traffic interchanged with the branch as will, together with the net earnings of the branch, give investors a return of $3\frac{1}{2}$ per cent. on their rupee capital expenditure.

In the case of contracts based on the revised terms, the Secretary of State agreed to the adoption, "as the usual procedure," of the proposal to calculate

the period for the determination of such contracts from the 1st January of the year following that in which the branch railway is expected to be opened for traffic through-

out, but did not lay down any formal rule on this point, as it is considered desirable to retain freedom of action in negotiating with the promoters of branch lines.

To the question raised whether the construction of branch lines under the

Despatch No. 72 Railway, dated 29th June 1897, to Secretary of State.

Despatch No. 106 Railway, dated 4th November 1897, from Secretary of State.

first, or firm guarantee, alternative of the Resolution of 17th April 1896, should be permitted irrespective of the limitation of the $29\frac{2}{3}$ -crore programme, the Secretary

of State, while admitting that he did contemplate the construction of such lines in addition to those embraced in the programme, decided that, in the condition of Indian finance, no reductions should be made in that programme which were not absolutely necessary, and no new construction or guarantee, beyond what was already sanctioned, undertaken unless for strong and exceptional reasons.

104. Raising of capital on altered terms as regards rate of exchange for the Madras and Great Indian Peninsula railway extensions.—When the construction

Despatch No. 3 Railway, dated 6th January 1897, to Secretary of State.

Despatch No. 38 Railway, dated 31st March 1897, to Secretary of State.

Despatch No. 42 Railway, dated 6th May 1897, from Secretary of State.

Despatch No. 67 Railway, dated 15th July 1897, from Secretary of State.

the Government of India, the question of the manner in which the capital and revenue transactions of the extensions should be dealt with in the accounts of the main line also came up for discussion, and in addressing the Secretary of State on the subject, the Government of India advised that the cost of constructing the extensions should be met out of special debentures to be raised by the companies concerned; but as the application of the 1s. 10d. rate of exchange under the principal contracts had a very unfavourable effect on the Government revenues, they recommended that separate accounts should be made up for the extensions at a proper rate of exchange. The companies have accepted the view of the Government of India with regard to this matter, and it has been arranged that the "prescribed" rate of exchange shall apply to the capital transactions of these extensions.

105. Raising of capital by the Bombay, Baroda and Central India Railway Company on altered conditions as to rate of exchange.—At the beginning of the year 1897, the Bombay, Baroda and Central India Railway Company finding that its available resources would be inadequate to meet its capital requirements in the near

Despatch No. 46 Railway, dated 13th May 1897, from Secretary of State.

Despatch No. 81 Railway, dated 4th August 1897, to Secretary of State.

Despatch No. 55 Railway, dated 30th June 1898, from Secretary of State.

future proposed to obtain an enlargement of its borrowing powers from one-third to one-half of the subscribed capital, thus enabling the company to raise by debentures the funds that may be required in excess of

its borrowing powers at the time. The company also asked that the average or "prescribed" rate of exchange, instead of the fixed contract rate of 1s. 10d. per rupee, might be made applicable to the company's borrowing powers exercised thereafter both as regards the principal sum raised and the refund of guaranteed interest thereon.

These proposals were forwarded by the Secretary of State with despatch No. 46 Railway, dated 13th May 1897, for the views of the Government of India, and in despatch No. 81 Railway, dated 4th August 1897, the Government of India expressed the opinion that the proposals in respect of both points should be accepted. Arrangements have since been made for the company obtaining the enlarged borrowing powers required, and as intimated in Secretary of State's despatch No. 55 Railway, dated 30th June 1898, it has been arranged between the Secretary of State and the company that the average rate of exchange, instead of the contract rate of 1s. 10d. per rupee, shall be applied to moneys drawn by the company for capital purposes after 31st December 1897.

106. Automatic vacuum brakes.—The work of fitting the locomotives and vehicles of the railways noted on the margin, with automatic vacuum brakes is pro-

East Indian.

Indian Midland.

North Western State.

Oudh and Rohilkhand State.

Eastern Bengal State (standard and metre gauges).

Great Indian Peninsula.

Bombay, Baroda and Central India.

Madras.

South Indian.

gressing steadily. Of the other principal lines, a portion of the rolling-stock of the East Coast State and His Highness the Nizam's Guaranteed State railways and all the engines and carriages erected for the Assam-Bengal railway have also been fitted; but the brakes have not yet been brought into use. On the Bengal-Nágpur railway the brakes are about to be introduced.

The number of cases in which the automatic vacuum brakes failed to act, as compared with the mileage run by trains fitted, was 1 in 61,210 miles in 1894 against 1 in 58,940 miles in 1897.

107. *Lighting of railway carriages.*—The question of improving the system of lighting railway carriages in India is engaging the attention of the railway authorities. Most of the important lines have adopted Pintsch's system of gas lighting, and it will shortly be introduced on the Southern Mahratta railway.

East Indian.
Bengal-Nágpur.
North Western State.
Oudh and Rohilkhand State.
Eastern Bengal State (standard gauge).
Great Indian Peninsula.
Bombay, Baroda and Central India.
Madras.
Assam-Bengal.

Stone's system of electric lighting for railway carriages is also being tried on the Burma, Jodhpore and South Indian railways; and one set of the apparatus is under supply for trial on the Bengal-Nágpur railway.

RAILWAY RATES AND FARES.

108. The principal alterations made from 1894 were:

Coaching.

109. *Passenger fares.*—On the East Indian railway system, the intermediate class single journey fare was reduced from $4\frac{1}{2}$ to $3\frac{1}{2}$ pies per mile, with effect from the 1st October 1894. Since then, this class of accommodation has steadily grown in popularity, and there has been a continuous increase in the receipts.

On the Oudh and Rohilkhand State railway, the special fare of 3 pies per mile for third class passengers by mail trains was withdrawn from the 1st June 1894 on account of the reduction in the speed of mail trains. The uniform rate of $2\frac{1}{2}$ pies per mile now applies. This reduction has, to some extent, resulted in a falling off in the earnings from third class traffic.

On the East Coast State railway, the fares for first and second class passengers were raised from 12 and 6 to 18 and 9 pies per mile, respectively, from the 1st January 1895; an intermediate class, with a fare of $4\frac{1}{2}$ pies per mile, was introduced in July 1896, and the third class fare, which, in December 1893, was $1\frac{1}{2}$ pies per mile, was raised, with effect from the 1st January 1894, to 2 pies per mile. The enhancement of the first and second class fares has resulted in an improvement in the long distance traffic. Owing to the intermediate class having only recently been introduced, the benefits to be derived from its introduction are not as yet apparent. There has been a marked increase in the receipts from third class traffic, but owing to the additional mileage opened periodically it cannot be said how the enhancement of the fares has affected this increase.

On the Great Indian Peninsula railway system, the third class fare by ordinary passenger and mixed trains was reduced from $2\frac{1}{2}$ to 2 pies per mile with effect from the 1st January 1896. This has resulted in a decrease in the earnings from third class traffic by mail trains and a slight increase in the same traffic by ordinary trains.

On the Madras railway, the third class fare by ordinary passenger train was raised on the 1st January 1895, from $1\frac{1}{2}$ to 2 pies per mile. The raising of the fare by ordinary trains resulted in an increase in the earnings and decrease in the number; but the subsequent lowering of the fare by day trains for short distances has resulted in a numerical increase but a decrease in the earnings from third class traffic.

On the Southern Mahratta railway system, the third class fare of $2\frac{1}{2}$ pies per mile, which obtained on the Poona-Londa and Guntakal-Castle Rock sections, was withdrawn from the 1st January 1894, making the fare of 2 pies per mile uniform over the whole of the company's system. There has been a marked improvement in the third class traffic on account of the reduction being made general over the whole system.

On the South Indian railway system, the second class fare of 4 pies per mile was increased with effect from the 1st July 1897 to 6 pies per mile. This enhancement, though accountable for a decrease in the earnings from second class traffic, contributed to an increase in the third class traffic.

On the Burma railways, an intermediate class was introduced from the 12th September 1897, and, following the principle underlying the zone system, a telescopic scale of charges was introduced for second, intermediate and third class passengers with the view to encourage long distance travel, the fares ranging from 6 to 9 pies for second class, 3 to $4\frac{1}{2}$ pies for intermediate class and $1\frac{1}{2}$ to 3 pies for third class passengers. Notwithstanding the introduction of an intermediate class, all other classes showed increases. The zone system has not had time to develop.

110. *Luggage and parcels rates.*—Revised rules and rates for the carriage of luggage and parcels, which were drawn up by the Railway Traffic Conference of 1893, were generally introduced during 1895.

Goods.

111. *Rates for the carriage of coal and railway materials and stores.*—Revised rates, diminishing according to distance from $\frac{1}{3}$ rd to $\frac{1}{10}$ th pie per maund per mile, for the carriage of (i) coal for the general public and (ii) coal for foreign railways, and from $\frac{1}{6}$ th to $\frac{1}{10}$ th pie per maund per mile for (iii) foreign railway materials and stores, excluding coal, were prescribed in 1895 for adoption on all State lines administered by Government and on the East Indian railway.

The same rates have been accepted by the Bengal Central, Great Indian Peninsula, Bombay, Baroda and Central India, Tarkessur, South Indian, Assam-Bengal, and Oodeypore-Chitor railways, except in the case of the Great Indian Peninsula railway for Singareni coal, for which the rates to Bombay, Parel, Dádar and *via* Coorla and Thana are already lower than the schedule rates; while the Bengal-Nágpur, Indian Midland, Bengal and North-Western and Rohilkund and Kumaon railways have accepted them subject to certain conditions and exceptions. The Southern Mahratta railway has accepted only the schedule of rates for the carriage of foreign railway materials and stores, excluding coal.

112. *Rates for the carriage of explosives and other dangerous articles.*—In December 1896 a new class, designated "Explosives, including dangerous goods," with a maximum of $1\frac{1}{2}$ pies and a minimum of $\frac{1}{6}$ th pie per maund per mile, was added to the schedules of rates for the carriage of goods traffic on the East Indian, Bengal Central, Bengal-Nágpur, Indian Midland, Bengal and North-Western, the Lucknow-Bareilly section of the Rohilkund and Kumaon, Rajputana-Malwa (including the Godhra-Rutlam), Southern Mahratta, South Indian, Assam-Bengal and Burma railways, and on all railways directly administered by the State.

113. *Reduction of rates on account of famine.*—Owing to the scarcity which prevailed in many parts of the country during 1896 and 1897, the normal direction of the flow of traffic was largely altered, and in some cases actually reversed. To encourage anticipated imports, the principal railways quoted for import traffic despatched up-country from the ports the reduced rates normally applicable to exports, and also made other large reductions in order to develop the traffic and stimulate the movement of food-grains into the distressed tracts.

The East Indian, Bengal-Nágpur, Indian Midland, North Western State, Oudh and Rohilkhand State, Eastern Bengal State, East Coast State, Great Indian Peninsula, Bombay, Baroda and Central India, and Bengal and North-Western railways reduced the rates for the carriage of food-grains from 1 to 60 per cent. below the rates ordinarily charged for carrying food-grains.

In addition to these reductions, the Bengal-Nágpur railway carried free of charge 2,800 tons of American wheat for distribution by missionaries to the famine-stricken people of the Central Provinces, and the Southern Mahratta railway specially reduced the rate for the carriage of cattle and of fodder for cattle by 50 per cent.

CONFERENCE REGULATIONS.

114. *Traffic.*—With certain exceptions, all the railway administrations in India have generally adopted the conference regulations, as revised by the Railway Traffic Conference, 1893.

LOCAL RAILWAY TAXATION.

115. In August 1894, the question of the reasonableness or otherwise of the taxes levied from the several railway administrations by municipal and other local bodies was finally dealt with, and orders issued as to the procedure which should be adopted for the revision of any tax or of its assessment, and for the imposition of any new tax on a railway.

The Governor General in Council, in reviewing existing taxes, considered them to be in their nature generally fair and reasonable, that the assessment in the majority of cases was moderate, and that a general revision of the existing system of local taxation in regard to railways was unnecessary. The orders, however, provided that should any railway administration consider any particular tax or its assessment unreasonable or disproportionate to the services rendered, application for the revision of such tax or its assessment should be made direct to the Commissioner in charge of the division in which the tax is levied, or, where there is not such a Commissioner, to the officer holding a corresponding position, who was thereby appointed under section 135, sub-section (2), of the Indian Railways Act, IX of 1890, to enquire specially into all the circumstances of the case and to determine, in communication with the contending parties, the sum, if any, which should be paid.

The Governor General in Council also invited the attention of Local Governments and Administrations to previous orders under which every railway administration was declared liable to pay all taxes legally in force during the year ended on the 30th April 1890, and directed that when it is sought to impose any new tax on a railway, application should be made through the Local Government concerned for the sanction of the Governor General in Council under section 135, sub-section (1) of the Act referred to above, and that in all such applications the reasons for imposing the new tax must be fully explained and the views of the railway administrations affected thereby obtained and submitted by the Local Government together with the application.

GENERAL RULES FOR WORKING RAILWAYS IN BRITISH INDIA.

116. Revised General Rules for working open lines of railway in British India were framed under section 47 of the Indian Railways Act, IX of 1890, and brought into force during 1896 and 1897 on all lines of railway, with the exception of the Darjeeling-Himalayan railway, for which special rules were sanctioned for adoption from the 1st April 1897.

ACCIDENTS.

117. In April 1895, revised rules were framed, under the provisions of section 84 of the Indian Railways Act, IX of 1890, regarding notices and reports of accidents occurring in the course of working a railway, and prescribing the duties of railway servants, police officers, Government Inspectors and Magistrates on the occurrence of such accidents. A procedure was also prescribed for adoption in the case of accidents occurring otherwise than in the course of working a railway, e.g., damage to line or works from excessive floods, etc., involving interruption to traffic but not causing any train accident.

With an average of 19,542 mean miles worked per year and a total of 265 $\frac{1}{4}$ millions of train-miles run during the four years from 1st January 1894 to 31st December 1897, there were 236 accidents to trains, rolling-stock, permanent-way, etc., on Indian railways for every 1,000 mean miles worked per year, and 7 accidents for every 100,000 train-miles run.

The proportions of passengers killed and injured by accidents to trains from causes beyond their control to the number of passengers booked during the same period were 1 in 11 millions and 1 in 1 $\frac{3}{4}$ millions, respectively, and of passengers killed and injured from all causes, 1 in 2 millions and 1 in 556,873, respectively.

The proportion of total casualties (passengers killed and injured from all causes) to the number booked was 1 in 436,038, and to the number of passenger units carried one mile, 1 in 17 $\frac{1}{2}$ millions.

COLLIERIES, OIL AND IRON WORKS.

118. *Kurhurbaree and Serampore collieries*.—These collieries are worked in connection with the East Indian railway. The output of coal in 1897 was 454,021 tons, against 391,214 tons in 1894.

The briquette plant at Serampore has been completed, and now turns out 90 tons per day of briquettes by the lime-meal process.

119. *Dandot colliery*.—This colliery is worked in connection with the North Western State railway, and has a fairly regular market outside for its slack coal. The output of coal has risen from 61,976 tons in 1894 to 79,647 tons in 1897. The colliery is capable of a much larger output than is now obtained, but is hampered by the dearth of labour.

120. *Bhaganwala and Khost collieries*.—In addition to Dandot, the Bhaganwala and Khost collieries are worked in connection with the North Western State railway. The output on these collieries is however small.

121. *Coal mines in the Sor Range near Quetta*.—It was ascertained in 1893 that the average output of these mines would be 10,000 tons annually. The output in 1897 was, however, only 4,500 tons. The Government of India sanctioned in 1898 the entertainment of a superintendent at a cost of Rs. 5,000 a year, as it was believed the mines were suffering from want of skilled supervision. The cost of working these mines is met from the assigned revenues of Baluchistan.

122. *Palana coal mine*.—Coal was discovered in 1897 in Palana, a small village in Bickaneer territory within the jurisdiction of the Saddar Tehsil, and a search party is at work. There are also indications of coal in other places, and endeavours are being made to locate the coalfield.

123. *Umaria colliery*.—This colliery is situated in the Rewa State of the Central Provinces. In 1896 the Maharaja of Rewa attained his majority, and the Government of India, who had been working the colliery on his behalf during his minority, then gave him the option of taking it over and working it himself or leasing it to a private company. They suggested, however, that until there

Letter No. 42C., dated 14th November 1896, was an assurance of other collieries being from Government of India, Foreign Department, started in Rewa the workings at Umaria to Agent to the Governor General, Central India. should be continued by either the Government of India or the Rewa State itself. In 1898 the Rewa Durbar decided to take over the colliery, and negotiations to this end are proceeding.

The total output during 1897-98 was 119,201 tons, as compared with 94,846 tons in 1892-93. The prospects of the colliery are improving.

124. *Warora colliery*.—The output of coal in this colliery, which was 120,789 tons in 1893-94, fell to 112,203 tons in the following year, but rose to 113,455 tons in 1896-97. Though the output is still less than it was in 1893-94, the efforts to work the mine economically have been very successful, the percentage of net receipts on capital expenditure having risen from 0.32 in 1893-94 to 8.94 in 1896-97. It is estimated that the coal in the existing workings will, at the present rate of output, be exhausted in 11 years.

125. *Mohpani colliery*.—The output of coal from this colliery, which is worked by the Nerbudda Coal and Iron Company, amounted to 19,975 tons in 1897, against 19,349 in 1894.

Fresh shafts are being sunk and the main feeders have yet to be tapped.

126. *Coalfields at Telanpali near the Eeb river*.—In 1894 sanction was given by the Government of India to the sinking of an experimental shaft in the Eeb coalfields, and work commenced in March 1895. The boring was carried to a depth of 485 feet, and samples of the cores sent to the Director, Geological Survey, on whose report a new boring has been directed to be made near Belpahar station on the Bengal-Nágpur railway.

127. *Singareni colliery*.—The output at this colliery, which is worked by the Hyderabad (Deccan) Company, has risen from 240,524 tons in 1894 to 365,550 tons in 1897.

Arrangements were made in 1896 with the Great Indian Peninsula and His Highness the Nizam's Guaranteed State Railway Companies which enable Singareni coal to compete in the Bombay market, and further steps are being taken to more fully develop the resources of this colliery.

128. *Makum collieries*.—The Assam Railways and Trading Company work these collieries. The output of coal in 1897 was 184,271 tons, against 169,195 tons in 1894.

The demand for Assam coal is increasing, as it is largely used by ocean and inland steamers, railways, mills and factories.

129. *Letkonbin colliery*.—This colliery is worked by the Burma Coal Company. The output in 1897 was 10,162 tons.

130. *Petroleum in Assam*.—At the Digboi field, which is owned by the Assam Railways and Trading Company, there are 15 bore holes of depths varying from 720 to 1,680 feet. The total amount of crude oil extracted has risen from 62,876 gallons in 1893-94 to 219,780 gallons in 1897. Nine wells have been sunk at Makum, but the yield is at present small.

A new refinery was erected in 1895 at Margherita on a large scale, which commenced its operations in 1896 with very satisfactory results, a good quality of kerosine oil and first class paraffin wax having been put on the market or utilized by the company.

131. *Petroleum boring operations in Baluchistan and Sind.*—Borings have been made at Chappar Rift, Sukkur and Kundra, but without success, no oil having been

Despatch No. 8 Public Works, dated 3rd February 1897, to Secretary of State. struck. At Sukkur, the boring was continued to a depth of 1,620 feet before it was abandoned, while at Chappar Rift it was carried down to 700 feet.

132. *Bengal Iron and Steel Company*.—This company, which contracted a lease with the Secretary of State for the Burrakur Ironworks in 1890, have not succeeded in making them pay. The Government of India, anxious to encourage the enterprise as a *bonâ fide* attempt to start a valuable industry in the country, reduced the

Government of India letter No. 102 Coal & Iron, dated 26th October 1895, in the Public Works Department, to the Director General of Railways. royalty on the sale of coal from six to two annas per ton in 1896, and agreed to place orders for pig iron and castings up to 10,000 tons annually for a period of ten years.

TELEGRAPHS.

INDIAN TELEGRAPH DEPARTMENT—TELEGRAPHS AND TELEPHONES.

133. *Percentages of increases.*—Comparing 1892-93 with 1897-98, the percentages of increases are as follows (*vide* statistics in the more detailed portion of this note):

134. *Field Telegraph systems.*—In addition to the ordinary operations, the Department has had charge of the Field Telegraph systems in connection with the following expeditions:

Waziristan } 1894-95, 1897-98,
 Tochi Valley }
 Chitral—1895-96, 1897-98,
 Malakand—1897-98,
 Mohmand—1897-98,
 Buner—1897-98,
 and
 Tirah—1897-98.

135. *Budapest Conference.*—At the Budapest Conference of 1896 the following principal changes affecting India were

Despatch No. 20 Telegraph, dated 1st October 1896, from Secretary of State.

adopted, with effect from the 1st July 1897 :

- (1) An increase in the length of a permissible word in telegrams wholly in plain language, as distinguished from telegrams wholly in Code, or partly in Code and partly in plain language, 15 letters being allowed as the maximum, instead of 10 as heretofore.
- (2) An increase in the number of figures and signs permissible as one word when written in series as regards every class of telegram, five characters being counted as a word, in place of three as heretofore.
- (3) The counting as one word only of the sender's special instructions, if written in the authorized abridged form.
- (4) The exclusion of Sundays in the limit of 72 hours allowed for obtaining or giving corrections to telegrams by means of paid Service Advices.
- (5) Substantial reductions in the rates between India and the East and South Africa, including Mauritius, as also between India and the Straits, China and Japan; as well as minor reductions in their terminal rates by the Russian and Persian Governments.

The reductions in the rates to Japan, China, and South Africa are very considerable, and it is believed they will afford a great relief to the trade with those countries. No reductions were made in the rates between India and the Australian Colonies.

136. *Delivery of deferred messages.*—The system of delivering deferred

Government of India notification No. 139, dated 25th March 1897, in the Public Works Department, as a preliminary to further reductions in the tariff for inland telegrams, was introduced with effect from the 1st April 1897.

It has worked without inconvenience, and to the great benefit of the public, but on financial grounds it is considered desirable to await the results of one or two years more before making any further change in the tariff for inland telegrams, which remains the same as when it was introduced in 1882. It is hoped that the present eight-anna deferred message will gradually displace the one rupee ordinary message, and take its place as the class of telegram normally in use. With a free address in all telegrams as now, a slightly cheaper urgent telegram at three times, instead of four times, the eight-anna rate, with a very simple deferred telegram of limited length delivered by post at a fixed charge of four annas, and with the abolition of the present one rupee ordinary telegrams, India (including Burma), notwithstanding its immense extent, will possess a tariff which can compare favourably with the tariffs of other countries working under more advantageous conditions. The first step of an important programme following somewhat the above lines, has been taken by the measure described above introduced on the 1st April 1897.

137. *Miscellaneous.*—The line of telegraph required for Imperial purposes from Kohala on the frontier of Kashmir to Gilgit was completed by 1894-95, and this line, with certain branches, was formally taken over and incorporated in the Imperial Telegraph System of India in April 1896.

The Kashmir State continue to work some less politically important

Memo. of Agreement.

telegraph lines, and a satisfactory agreement for an interchange of traffic between

the two systems came into force on the 1st August 1897.

Direct communication was established with the Chinese Imperial telegraphs on the Yunan frontier in March 1895, Bhamo being the Junction Office in India, where all arrangements have been made for transacting a large business. This

Despatch No. 32 Telegraph, dated 29th November 1894, from Secretary of State.

international route, which has great capacities, has unfortunately not attracted

much traffic so far, owing to the irregular working of the Chinese lines.

Diplomatic representations were also made to the Government of Siam, at the instance of the Government of India, on the subject of improving the state of their telegraph lines which connect with the British telegraph system in Lower Burma.

It is gratifying to record that this route now works satisfactorily, a great improvement in the maintenance of communication having been recently effected.

The table below shows the position of the Telegraph Department at the end of the year 1897-98 compared with 1892-93 :

YEAR,	MILES OF		NUMBER OF OFFICES OPEN FOR PAID TRAFFIC.					Number of telegrams booked for despatch in the Departmental Offices.	Revenue expenditure, Rs.	Receipts, Rs.	Capital expenditure to end of year, Rs.
	Posts including Cable,	Wire including Cable,	Departmental.	Railway and Canal maintained by the Telegraph Department.	Railway and Canal not maintained by the Telegraph Department.	TOTAL.					
1892-93	41,304	126,525	1,100	1,453	871	3,424	3,981,411	51,56,998	75,83,174	54,34,6,615	
1893-94	42,981	134,529	1,224	1,511	892	3,627	4,184,790	53,04,761	80,07,306	5,66,00,989	
1894-95	44,918	138,526	1,362	1,521	924	3,807	4,391,226	56,93,218	80,39,675	5,73,84,296	
1895-96	46,637	143,188	1,461	1,533	1,052	4,046	4,736,734	57,83,726	89,74,949	5,87,68,582	
1896-97	48,852	148,404	1,563	1,606	1,083	4,252	5,077,584	62,15,068	89,64,400	6,04,99,394	
1897-98	50,570	155,088	1,634	1,668	1,120	4,422	5,713,227	62,66,575	1,09,25,677	6,29,36,434	
Increase since 1892-93	9,266	28,563	534	215	249	998	1,731,816	11,09,577	33,42,503	85,89,819	

138. *Financial results.*—The surplus of revenue over expenditure earned during the five years under review was equivalent to the following rates of interest on the capital of the Department :

		Interest on capital.
1893-94	•	4'78
1894-95	•	4'09
1895-96	•	5'43
1896-97	•	4'54
1897-98	•	7'40

The abnormal receipts of 1897-98 were due to the extensive military operations on the frontier, and to plague, famine and other exceptional circumstances.

139. *Telegraph and telephone improvements.*—In the Electrical branch of the Department continued attention has been paid to the development of the carrying capacity of the wires by the extension of duplex and quadruplex working wherever required. Arrangements for long distance working and for the rapid transmission of long press messages were also provided. The use of the Cardew Vibrating Sounder, combined with the telephone as a receiving instrument, has also been considerably extended not only to work through defective lines or cables, but also for working both ordinary Morse signals and the vibrator signals on one wire simultaneously, thus doubling the carrying capacity of the wire. In the case of working through a defective cable, it may be mentioned as an instance of the great value of this arrangement, that communication was maintained by the vibrator method of working between India and Ceylon for a period of nine months in 1894-95, through the only cable available, which had developed a dead-earth fault and could not be repaired till the season for such operations in Palks Strait. This device therefore saved Ceylon from being cut off for this long period from all telegraphic communication with the outer world, and secured valuable traffic which otherwise would have been lost.

Experiments were also made in long distance telephony, proving the practicability of working distances of over 1,000 miles, with the condition that separate and suitably constructed lines should be provided for the purpose. The costliness of such lines is a bar to the introduction of this system of communication into India to meet the very limited demand.

In 1895-96 the Secretary of State for India sanctioned, on the recommendation of the Government of India, a bonus of one year's pay, Rs. 19,200, to Mr. W. F. Melhuish for his invention and improvements in connection with long distance telegraphy.

140. *Telegraph extensions.*—Under Telegraph Construction, the following extensions of interest may be noted:

- (a) A line of great political importance was erected between Taunggyi in the Southern Shan States and Kengtung, a distance of 241 miles in 1895-96. Kengtung is the most easterly telegraph office of the Department. The line was erected during the rainy season under great difficulties.
- (b) A line was erected from Tavoy to Mergui, 145 miles, in the Tenasserim promontory, thus bringing this hitherto very isolated pearl fishery station into communication with the head-quarters of the Government of Burma. The line was begun in 1897-98 and completed early in 1898-99.
- (c) A Field telegraph line was extended from Hoti Mardan to Chitral *via* the Malakand, 183 miles, in 1895, and the line is still maintained, with the exception of a break between Chakdara and Kila Dros.
- (d) The Imperial telegraph line from Srinagar in Kashmir to Gilgit was completed.
- (e) A temporary line, 149 miles in length, with ten offices, was constructed in 1894-95 from Hardwar to Gohna over a very difficult country, with a view to the warning of the inhabitants and the saving of life on the occasion of the bursting of the natural dam on the Gohna lake in August 1894, a result which was most successfully attained.
- (f) Communication between Bombay and the North-Western Provinces was greatly strengthened by the erection of a copper wire between Bombay and Agra in 1897-98.

141. *Telephones.*—The increase in the business of the telephone companies is as follows:

	Number of subscribers.	Number of exchange connections.	Number of private lines.
1892	1,231	1,237	155
1897	1,826	1,802	229

The statistics for the telephone business of the Telegraph Department are:

	Number of exchanges.	Number of exchange connections.	Number of private lines offices.
1892	23	188	273
1897	41	357	454

142. *Rules under the Electricity Act.*—Revised rules were issued by the Government of India on the 3rd of December 1897, under the powers conferred

Government of India notification No. 495, dated 3rd December 1897, in the Public Works Department.

by section 4 of the Electricity Act, 1887 (XIII of 1887), in supersession of the rules previously issued on the 3rd of

May 1889. The new rules have been brought up to date and assimilated with the latest regulations of the Board of Trade in London, and have for their object the protection of persons and property and the prevention of injury to telegraph and telephone lines in places where electricity is employed for lighting, power or traction.

143. *Charges for supply and maintenance of telegraph wires and instruments.*—

Government of India resolutions Nos. 183 T., dated 10th August 1896, 209 T., dated 9th September 1896, and 144 T., dated 12th June 1897, in the Public Works Department.

The following revised rates have been adopted for the supply and maintenance of telegraph wires and instruments:

	Rs.	a.	p.
Railway telegraph wires (per mile, <i>per mensem</i>)	2	3	0
Railway telegraph instruments (per instrument, <i>per mensem</i>)	4	8	0
Canal telegraph wires (per mile, <i>per annum</i>)	26	4	0
Return telephone wires (per mile, <i>per annum</i>)	13	2	0
Canal telegraph wires for which posts have been supplied by the Canal authorities (per mile, <i>per annum</i>)	16	4	0
Return telephone wires for which posts have been supplied by the canal authorities (per mile, <i>per annum</i>)	8	2	0
Canal telegraph instruments, including telephones (per instrument, <i>per annum</i>)	60	0	0

In 1897, the Government of India agreed to the rate of interest charged in the

Government of India letter No. 198 T., dated 4th August 1897, in the Public Works Department, to the Director General of Telegraphs.

case of telegraph lines guaranteed by Local Governments, public bodies and Native States being reduced from 5 to 4 per cent.

TELEGRAPH ESTABLISHMENTS.

144. *Indian Telegraph Department.*—The sanction originally accorded in 1890 to the grant for five years to Sub-Assistant Superintendents of special increments of Rs. 50 and Rs. 100 after five and ten years' approved service, respectively, was renewed in 1896 for a further period of five years commencing from the 5th April 1895.

Sanction was accorded in 1893 to the temporary grant of local allowances to the employés of the Telegraph Department serving in Kashmir to compensate them for the expense and hardships they have to bear. This was renewed from time to time, and sanction was finally given to the continuance of the allowances for three years with effect from the 1st April 1898.

With a view to strengthening the direction of the Indian Telegraph Department, the Superintendents of two divisions, absorbed in 1894, were attached to the office of the Director General of Telegraphs.

Sanction was in 1898 accorded to the permanent appointment in the Telegraph Department of five temporary Assistant Superintendents who had been engaged in 1893 on five-year covenants.

Despatch No. 10 Telegraph, dated 11th November 1897, to Secretary of State. Despatch No. 13 Telegraph, dated 23rd December 1897, from Secretary of State.

145. *Indo-European Telegraph Department.*—To enable the Indo-European Telegraph Department to be administered without frequent references to the Secretary of State on unimportant points, the Government of India agreed in 1894 to grant to the Director-in-Chief powers similar to those exercised by the Director General of Telegraphs in India.

The employés of the Indo-European Telegraph Department were in 1895 admitted to the benefits of the Postal Life Insurance rules.

In 1897, all officers of the graded establishment of the Indo-European Telegraph Department and the medical officers, if appointed by the Secretary of State, and the four senior officers of the cable ship *Patrick Stewart*, were admitted to the benefit of the European leave rules, and in 1898 the superior staff of this vessel were graded with the general establishment of the Indo-European Telegraph Department, and the various superior appointments were classed as in the Indian Telegraph Department.

Despatch No. 297 Financial, dated 31st October 1894, to Secretary of State.

Despatch No. 204 Financial, dated 28th July 1896, to Secretary of State.

Despatch No. 162 Financial, dated 24th September 1896, from Secretary of State.

Government of India resolution No. 2836 P., dated 29th June 1897, in the Finance and Commerce Department.

Despatch No. 2 Telegraph, dated 27th January 1898, from Secretary of State.

Despatch No. 1 Telegraph, dated 24th March 1898, to Secretary of State.

GOVERNMENT OF INDIA.

PUBLIC WORKS DEPARTMENT.

Index of the contents of important despatches, resolutions and circulars, issued and received during the Viceroyalty of the Earl of Elgin.

1894-98.

Serial No.	Number and date.	Subject.	
	1894.	<i>Despatches.</i>	
1	No. 10 Ry., dated 1st February 1894, from Secretary of State.	Luckeeserai-Gya railway.	Grant of concession for construction of the line.
2	No. 22 Ry., dated 1st March 1894, from Secretary of State.	Metre gauge railway system in Northern India.	Execution of works in connection with the linking-up scheme.
3	No. 15 P. W., dated 21st March 1894, to Secretary of State.	Engineer establishment, Public Works Department.	Revision of cadre strength.
4	No. 27 Ry., dated 22nd March 1894, from Secretary of State.	Bengal-Nágpur railway extensions.	Proposal to entrust the Bengal-Nágpur Railway Company with the construction of certain lines of railway with the object of obtaining access to Howrah and the sea coast.
5	No. 28 Ry., dated 22nd March 1894, from Secretary of State.	Luckeeserai-Gya railway.	Proposals by Mr. W. W. Simpson for construction of the line.
6	No. 36 Ry., dated 19th April 1894, from Secretary of State.	East Indian railway.	Provision of funds for expenditure in 1894-95.
7	No. 25 P. W., dated 3rd May 1894, from Secretary of State.	Jamrao canal project in Sind.	Sanction to estimate of cost of construction.
8	No. 31 P. W., dated 5th June 1894, to Secretary of State.	Engineer establishment, Public Works Department.	Proposals regarding strength.
9	No. 34 Ry., dated 5th June 1894, to Secretary of State.	Metre gauge railway systems in Northern India.	Proposals for linking-up.
10	No. 34 P. W., dated 19th July 1894, from Secretary of State.	Rushikulya irrigation project in Madras.	Revised estimate of cost of construction sanctioned.
11	No. 35 P. W., dated 19th July 1894, from Secretary of State.	Engineer establishment, Public Works Department.	Observations on proposed strength.
12	No. 38 P. W., dated 26th July 1894, from Secretary of State.	Periyar irrigation works in the Madras Presidency.	Revised estimates of cost sanctioned.

Index of the contents of important despatches, resolutions and circulars, issued and received during the Viceroyalty of the Earl of Elgin, 1894-98—contd.

Serial No.	Number and date.		Subject.
	1894—contd.	Despatches—contd.	
13	No. 57 Ry., dated 26th July 1894, from Secretary of State.	Railways in Burma .	Formation of a Company to take over existing railways and construct new ones in Burma. Proposals by Messrs. Ogilvy, Gillanders & Co.
14	No. 58 Ry., dated 2nd August 1894, from Secretary of State.	Ahmedabad-Parantij-Idar-Ahmednagar railway.	Proposals by the Board of the Bombay, Baroda and Central India Railway Company for construction of the line.
15	No. 61 Ry., dated 2nd August 1894, from Secretary of State.	Indian railways. Branch line terms.	Suggestions for making the terms offered by Government more attractive to the investing public.
16	No. 62 Ry., dated 2nd August 1894, from Secretary of State.	Indian railways. Payment of interest out of capital.	Furnishing copies of the Act to enable Railway Companies to pay interest out of capital during construction.
17	No. 67 Ry., dated 23rd August 1894, from Secretary of State.	Railways in Burma .	Proposals by Messrs. Norton, Rose, Norton & Co. for their construction.
18	No. 69 Ry., dated 6th September 1894, from Secretary of State.	East Indian railway .	Annual allotment of funds for capital expenditure.
19	No. 48 P. W., dated 19th September 1894, to Secretary of State.	Cart road from Nichuguard to Manipur.	Revised estimate of cost of construction.
20	No. 77 Ry., dated 25th October 1894, from Secretary of State.	Metre gauge railway systems in Northern India.	Scheme for linking-up.
21	No. 297 Finl., dated 31st October 1894, to Secretary of State.	Indo-European Telegraph Department.	Proposals for improving the position and prospects of the officers of the cable ship "Patrick Stewart."
22	No. 55 P. W., dated 8th November 1894, from Secretary of State.	Cart road from Nichuguard to Manipur.	Revised estimate for construction sanctioned.
23	No. 85 Ry., dated 15th November 1894, from Secretary of State.	Indian railways. Branch line terms.	Memorial from the Association of the Chambers of Commerce, United Kingdom, urging an enlargement of the maximum limit in respect of the application of rebate of traffic to branch lines.
24	No. 32 Tel., dated 29th November 1894, from Secretary of State.	Telegraph lines in Burma and China.	Treaty concluded between Great Britain and China for the junction of the telegraph lines in Burma and China.
25	No. 89 Ry., dated 29th November 1894, from Secretary of State.	Indian railways. Branch line terms.	Suggestions by Mr. Francis W. Fox and others, for the enlargement of the terms to be offered by Government.

Index of the contents of important despatches, resolutions and circulars, issued and received during the Viceroyalty of the Earl of Elgin, 1894-98—contd.

Serial No.	Number and date.	Subject.
	1894— <i>concl.</i>	<i>Despatches</i> —contd.
26	No. 33 Tel., dated 6th December 1894, from Secretary of State.	Indo-European Telegraph Department.
27	No. 82 Ry., dated 19th December 1894, to Secretary of State.	State Railway Provident Fund.
28	No. 96 Ry., dated 20th December 1894, from Secretary of State.	East Indian railway
29	No. 98 Ry., dated 20th December 1894, from Secretary of State.	Metre gauge railway systems in Northern India.
	1895.	
30	No. 7 Ry., dated 24th January 1895, from Secretary of State.	Railway Provident Fund.
31	No. 2 P. W., dated 31st January 1895, from Secretary of State.	Sidhnai irrigation canal in the Punjab.
32	No. 13 Ry., dated 14th February 1895, from Secretary of State.	East Indian railway
33	No. 17 Ry., dated 28th February 1895, from Secretary of State.	Bengal-Nágpur railway extensions.
34	No. 22 Ry., dated 7th March 1895, from Secretary of State.	East Indian railway
35	No. 16 Ry., dated 13th March 1895, to Secretary of State.	East Coast railway
36	No. 12 P. W., dated 21st March 1895, from Secretary of State.	Eastern Nara irrigation project in Sind.

Index of the contents of important despatches, resolutions and circulars, issued and received during the Viceroyalty of the Earl of Elgin, 1894-98—contd.

Serial No.	Number and date.	Subject.	
	1895—contd.	Despatches—contd.	
37	No. 22 Ry., dated 27th March 1895, to Secretary of State.	Railways in Burma	Proposals for the formation of a company to take over the existing State railways, and to construct extensions.
38	No. 29 Ry., dated 28th March 1895, from Secretary of State.	Indian railways. Branch line terms.	Proposed amendment of the branch line terms.
39	No. 30 Ry., dated 4th April 1895, from Secretary of State.	Ahmedabad-Parantíj railway.	Grant of concession to Messrs. Nixon Sedgwick & Co. for the construction of the line.
40	No. 23 P. W., dated 28th May 1895, to Secretary of State.	Engineer establishment, Public Works Department.	Proposals relating to permanent strength.
41	No. 48 Ry., dated 13th June 1895, from Secretary of State.	East Indian railway	Bill to confer further power on the East Indian Railway Company of entering into contracts for the construction and working of extensions of branch lines, and for other purposes.
42	No. 49 Ry., dated 13th June 1895, from Secretary of State.	Bengal-Nágpur railway extensions.	Concessions for construction of the extensions.
43	No. 56 Ry., dated 11th July 1895, from Secretary of State.	Surat-Nandurbár railway.	Proposed grant of a concession to Messrs. Killick, Nixon & Co. for the construction of the proposed railway on branch line terms, subject to the substitution of 4 instead of $3\frac{1}{2}$ per cent.
44	No. 31 P. W., dated 8th August 1895, from Secretary of State.	Engineer establishment, Public Works Department.	Revision of strength.
45	No. 64 Ry., dated 8th August 1895, from Secretary of State.	Cawnpore-Lucknow-Gogra metre gauge railway.	Call for revised estimate and authority to proceed with the work provided the expenditure does not exceed amount fixed.
46	No. 70 Ry., dated 15th August 1895, from Secretary of State.	East Indian railway	Method proposed by the Company for giving effect to the powers obtained for raising money for extensions of the undertaking.
47	No. 31 P. W., dated 3rd September 1895, to Secretary of State.	“Retreat” estate, Simla.	Perpetual lease as a suburban residence for His Excellency the Viceroy.
48	No. 93 Ry., dated 19th September 1895, from Secretary of State.	Bengal-Nágpur railway extensions.	Advance to the Company to meet expenditure for construction of their extensions.
49	No. 41 P. W., dated 26th September 1895, from Secretary of State.	Madras Harbour works.	Sanction to revised estimate of cost of construction.

Index of the contents of important despatches, resolutions and circulars, issued and received during the Viceroyalty of the Earl of Elgin, 1894-98—contd.

Serial No.	Number and date.	Subject.
	1895— <i>concl.</i>	<i>Despatches—contd.</i>
50	No. 78 Ry., dated 9th October 1895, to Secretary of State.	Indian railways. Branch line terms.
51	No. 49 P. W., dated 14th November 1895, from Secretary of State.	"Retreat" estate, Simla.
52	No. 51 P. W., dated 5th December 1895, from Secretary of State.	Nasrat, Naulakhi and Dad canals and branches in the Hyderabad collectorate in Sind.
	1896.	
53	No. 3 P. W., dated 29th January 1896, to Secretary of State.	Engineer establishment, Public Works Department.
54	No. 9 Ry., dated 6th February 1896, from Secretary of State.	Indian railways. Branch line terms.
55	No. 12 Ry., dated 12th February 1896, to Secretary of State.	Railway Provident Fund.
56	No. 15 Ry., dated 19th February 1896, to Secretary of State.	East Indian railway .
57	No. 21 Ry., dated 5th March 1896, from Secretary of State.	Mandalay - Kunlon railway.
58	No. 71 Finl., dated 18th March 1896, to Secretary of State.	Public Works and Telegraph Departments.
59	No. 28 Ry., dated 26th March 1896, from Secretary of State.	Railway Provident Funds
60	No. 38 Ry., dated 6th May 1896, to Secretary of State.	Railways in Burma .
61	No. 12 P. W., dated 7th May 1896, from Secretary of State.	Superior Traffic Department, Indian railways.
		Transfer of railways in Burma to a company for the purpose of working and making extensions.
		Recruitment of the Traffic Department of State and other Indian railways from the Royal Indian Engineering college, Cooper's Hill.

Index of the contents of important despatches, resolutions and circulars, issued and received during the Viceroyalty of the Earl of Elgin, 1894-98—contd.

Serial No.	Number and date.	Subject.
	1896—contd.	<i>Despatches</i> —contd.
62	No. 43 Ry., dated 2nd June 1896, to Secretary of State.	Indian railways. Branch line terms.
63	No. 64 Ry., dated 23rd July 1896, from Secretary of State.	Bengal-Nágpur railway extension.
64	No. 65 Ry., dated 23rd July 1896, from Secretary of State.	East Indian railway. Toposi Colliery-branches.
65	No. 204 Finl., dated 28th July 1896, to Secretary of State.	Indo-European Telegraph Department.
66	No. 162 Finl., dated 24th September 1896, from Secretary of State.	Indo-European Telegraph Department.
67	No. 20 Tel., dated 1st October 1896, from Secretary of State.	Budapest Telegraph Conference, 1896.
68	No. 34 P. W., dated 4th November 1896, to Secretary of State.	Superior Traffic Department, State Railways.
69	No. 76 Ry., dated 4th November 1896, to Secretary of State.	Railway Conference of 1896.
70	No. 324 Finl., dated 4th November 1896, to Secretary of State.	Enrolled list, Financial Department, Superior Accounts branch, Public Works Department, and Superior Traffic Department, State Railways.
71	No. 42 P. W., dated 12th November 1896, from Secretary of State.	Mandalay canal in Upper Burma.
72	No. 44 P. W., dated 12th November 1896, from Secretary of State.	Hijili Tidal canal.
		Terms on which Government are prepared to consider offers by private companies for their construction.
		Provision of funds for extensions.
		Sanction to total outlay with remark as to rule requiring sanction of Secretary of State, when the cost of a project or work is expected to exceed sanctioned amount.
		Views of the Government of India on the proposals for the admission of certain officers of the Indo-European Telegraph Department to the European leave rules.
		Admission of all officers of the graded establishment of the Indo-European Telegraph Department, the medical officers, if appointed by the Secretary of State, and the four officers of the cable ship "Patrick Stewart" to the benefits of the European leave rules.
		Report by the delegates representing India at the International Telegraph Conference held at Budapest in 1896.
		Recruitment of the Traffic Department from the Royal Indian Engineering college, Cooper's Hill.
		Conclusions of the Conference.
		Proposal regarding recruitment from England.
		Estimate of cost of construction sanctioned.
		Remarks on completion report.

Index of the contents of important despatches, resolutions and circulars, issued and received during the Viceroyalty of the Earl of Elgin, 1894-98—contd.

Serial No.	Number and date	Subject.	
	1896— <i>concl.</i>	<i>Despatches</i> —contd.	
73	No. 51 P. W., dated 3rd December 1896, from Secretary of State.	Cart road from Nichuguard to Manipur.	Re-alignment of the portion of road between Hungail and Sengmai, and sanction to expenditure incurred thereon.
	1897.		
74	No. 3 Ry., dated 6th January 1897, to Secretary of State.	Madras railway extensions.	Construction of the Calicut-Cannanore extension by the agency of the Madras Railway Company.
75	No. 8 Ry., dated 28th January 1897, from Secretary of State.	Railway Conference of 1896.	Remarks on the conclusions of the Railway Conference.
76	No. 8 P. W., dated 3rd February 1897, to Secretary of State.	Petroleum operations in Baluchistan and Sind.	Report of results obtained.
77	No. 13 Ry., dated 4th February 1897, from Secretary of State.	East Indian railway.	Views of the Government of India invited regarding the result of the working of the contract.
78	No. 9 P. W., dated 10th February 1897, to Secretary of State.	“Snowdon” estate, Simla.	Outlay to be incurred in improvements to render it a suitable residence for His Excellency the Commander-in-Chief.
79	No. 17 Ry., dated 10th February 1897, to Secretary of State.	Godhra-Rutlam and Bina-Goona railway extensions.	Views of the Government of India on the rival claims of the several companies for making the Agra-Delhi chord and extensions of the Godhra-Rutlam and Bina-Goona railways through Bara to Delhi and Ajmere, respectively.
80	No. 4 P. W., dated 11th March 1897, from Secretary of State.	Mutha canal project in the Bombay Presidency.	Sanction to revised estimate of cost.
81	No. 38 Ry., dated 31st March 1897, to Secretary of State.	Great Indian Peninsula railway.	Arrangements proposed for the treatment of the Debenture capital to be raised for the Chalisgaon-Dhulia and Amalner-Jalgaon branches.
82	No. 7 P. W., dated 8th April 1897, from Secretary of State.	“Snowdon” estate, Simla.	Excess outlay incurred in improvements and fixing a rental of Rs. 5,000 per annum sanctioned.
83	No. 18 P. W., dated 28th April 1897, to Secretary of State.	Royal Indian Engineering college, Cooper's Hill.	Proposed abolition of practical course which passed students are required to undergo.
84	No. 44 Ry., dated 5th May 1897, to Secretary of State.	Indian railways. Branch line terms.	Proposed method of calculating the date for the determination of contract and purchase of branch railways.

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Serial No.	Number and date.	Subject.	
	1897—contd.	Despatches—contd.:	
85	No. 42 Ry., dated 6th May 1897, from Secretary of State.	Madras railway extensions.	Acceptance of terms for the construction and working of the Calicut-Cannanore extension.
86	No. 46 Ry., dated 13th May 1897, from Secretary of State.	Bombay, Baroda and Central India railway.	Future requirements of the company for capital purposes.
87	No. 123 Finl., dated 18th May 1897, to Secretary of State.	Punjab Irrigation Officers.	Proposal for the grant of special local allowance.
88	No. 60 Ry., dated 24th June 1897, from Secretary of State.	Indian railways. Branch line terms.	Method to be adopted for fixing the date for determination of contracts.
89	No. 72 Ry., dated 29th June 1897, to Secretary of State.	Indian railways. Branch line terms.	Question whether feeder lines which come under the first (that is, the guarantee) alternative of the resolution of April 1896 are or are not to be included in the 20 $\frac{2}{3}$ -crore programme.
90	No. 15 P. W., dated 8th July 1897, from Secretary of State.	Punjab Irrigation Officers.	Grant of special local allowance sanctioned.
91	No. 17 P. W., dated 15th July 1897, from Secretary of State.	Royal Indian Engineering college, Cooper's Hill.	Abolition of practical course in the case of passed students.
92	No. 67 Ry., dated 15th July 1897, from Secretary of State.	Great Indian Peninsula railway.	Arrangements proposed for the treatment of the debenture capital to be raised for the Chalisgaon-Dhulia and Amalner-Jalgaon branches.
93	No. 81 Ry., dated 4th August 1897, to Secretary of State.	Bombay, Baroda and Central India railway.	Future requirements of the company for capital purposes.
94	No. 84 Ry., dated 11th August 1897, to Secretary of State.	East Indian railway.	Views of the Government of India in regard to the result of the working of the contract.
95	No. 86 Ry., dated 11th August 1897, to Secretary of State.	Southern section of the East Coast State railway, including the Bezwada-Madras State railway.	Proposed working by the Madras Railway Company.
96	No. 219 Finl., dated 11th August 1897, to Secretary of State.	Superior establishment of the Government of India, Public Works Department, Secretariat.	Proposals for re-organization.
97	No. 82 Ry., dated 19th August 1897, from Secretary of State.	Railway from Kurra-chee to Calcutta.	Correspondence with the Indian Midland railway regarding the proposal for the construction of the line.

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Serial No.	Number and date.	Subject.
	1897— <i>concl.</i>	<i>Despatches</i> —contd.
98	No. 92 Ry., dated 1st September 1897, to Secretary of State.	Bengal-Nágpur railway extensions.
99	No. 23 P. W., dated 23rd September 1897, from Secretary of State.	Western Jumna canal, Sirsa branch.
100	No. 29 P. W., dated 14th October 1897, from Secretary of State.	Superior establishment of the Government of India, Public Works Department Secretariat.
101	No. 30 P. W., dated 21st October 1897, from Secretary of State.	Orissa canals project.
102	No. 114 Ry., dated 28th October 1897, to Secretary of State.	Railway Conference of 1897.
103	No. 106 Ry., dated 4th November 1897, from Secretary of State.	Indian railways. Branch line terms.
104	No. 10 Tel., dated 11th November 1897, to Secretary of State.	Indian Telegraph Department.
105	No. 121 Ry., dated 11th November 1897, to Secretary of State.	Light railways.
106	No. 13 Tel., dated 23rd December 1897, from Secretary of State.	Indian Telegraph Department.
107	No. 362 Finl., dated 23rd December 1897, to Secretary of State.	Temporary engineers, Public Works Department.
	1898.	
108	No. 2 Ry., dated 13th January 1898, from Secretary of State.	East Indian railway.
109	No. 3 Ry., dated 13th January 1898, to Secretary of State.	Railway Provident Fund.
		Control of funds raised by the Company under the Act of 1895.
		Scheme for improvement.

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Serial No.	Number and date.	Subject.
	1898— <i>contd.</i>	<i>Despatches</i> — <i>contd.</i>
110	No. 2 Tel., dated 27th January 1898, from Secretary of State.	Superior staff of cable ship "Patrick Stewart."
111	No. 6 P. W., dated 24th February 1898, to Secretary of State.	European General hospital at Calcutta.
112	No. 8 P. W., dated 3rd March 1898, from Secretary of State.	Temporary engineers, Public Works Department.
113	No. 1 Tel., dated 24th March 1898, to Secretary of State.	Superior staff of cable ship "Patrick Stewart."
114	No. 11 P. W., dated 24th March 1898, to Secretary of State.	Chief and Superintending Engineers.
115	No. 15 P. W., dated 31st March 1898, from Secretary of State.	European General hospital at Calcutta.
116	No. 35 Ry., dated 5th May 1898, from Secretary of State.	Southern section of the East Coast State railway, including the Bezwada-Madras State railway.
117	No. 19 P. W., dated 19th May 1898, to Secretary of State.	Civil Engineers' Provident Fund.
118	No. 51 Ry., dated 23rd June 1898, from Secretary of State.	Bombay, Baroda and Central India railway.
119	No. 55 Ry., dated 30th June 1898, from Secretary of State.	Bombay, Baroda and Central India railway.
120	No. 21 P. W., dated 7th July 1898, from Secretary of State.	Administrative Officers of Public Works Department.
121	No. 22 P. W., dated 7th July 1898, from Secretary of State.	Civil Engineers' Provident Fund.

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Serial No.	Number and date.	Subject.	
	1898—concl.	<i>Despatches</i> —concl.	
122	No. 57 Ry., dated 7th July 1898, from Secretary of State.	Light railways.	Views regarding gauge of light railways for military and commercial purposes.
123	No. 58 Ry., dated 14th July 1898, from Secretary of State.	State railway Provident Fund.	Approval of scheme for improvement and adoption of same on companies' lines.
124	No. 22 P. W., dated 28th July 1898, to Secretary of State.	Rushikulya irrigation project, Madras.	Sanction to expenditure on the whole project.
125	No. 47 Ry., dated 4th August 1898, to Secretary of State.	Agra-Delhi chord railway.	Estimate of the cost of the project.
126	No. 31 P. W., dated 8th September 1898, from Secretary of State.	Rushikulya irrigation project, Madras.	Revised estimate sanctioned.
127	No. 81 Ry., dated 15th September 1898, from Secretary of State.	Agra-Delhi chord railway.	Sanction to the estimate of the cost of the project.
128	No. 68 Ry., dated 20th October 1898, to Secretary of State.	Railway Conference of 1898.	Conclusions of the Conference.
129	No. 72 Ry., dated 3rd November 1898, to Secretary of State.	Southern section of the East Coast State railway, including the Bezwada-Madras State railway.	Arrangements for working till the completion of the connection of the Bengal-Nagpur railway with Calcutta.
	<i>Circulars and important letters.</i>		
130	Public Works Department letter No. 1963 G., dated the 5th August 1896.	. . . .	Proposed discontinuance of course of practical training given to passed students of the Royal Indian Engineering college.
131	Military Department memorandum No. 2456 M. W., dated 4th September 1896.	. . . .	Final orders of Government on recommendations of the Committee appointed to consider the questions in connection with the organization and cost of the Military Works and Public Works Departments.
132	Public Works Department letter No. 102 C. & I., dated 26th October 1896.	. . . .	Reduction of royalty and agreement to accept certain quantity of iron annually from the Bengal Iron and Steel Company.
133	Foreign Department letter No. 42 C., dated 14th November 1896.	. . . .	Proposed transfer of the working of the Umaria colliery to the Rewah Durbar.

Index of the contents of important despatches, resolutions and circulars, issued and received during the Viceroyalty of the Earl of Elgin, 1894-98—contd.

Serial No.	Number and date.	Subject.
		<i>Circulars and important letters.— concl.</i>
134	Public Works Department letter No. 198 T., dated 4th August 1897.	Reduction of rate of interest to be charged in the case of telegraph lines guaranteed by Local Governments, public bodies or Native States.
135	Public Works Department letter No. 2492 G., dated 14th September 1897.	Admissibility of local allowances from 1st August 1897 to the Executive and Assistant Engineers, Punjab Irrigation branch.
136	Public Works Department letter No. 1889 G., dated 1st July 1898.	Question of improving the position and prospects of temporary engineers in the Public Works Department.
		<i>Resolutions.</i>
137	Finance and Commerce Department No. 2322 Ex., dated 9th May 1894.	Appointment of a committee to consider questions in connection with the organization and cost of the Military Works and Public Works Departments.
138	Public Works Department No. 514 R. C., dated 17th April 1896.	Terms on which the Government of India are prepared to consider offers for the construction by the agency of private companies of branch lines forming feeders either to State lines worked by the State or to railways worked by companies.
139	Finance and Commerce Department No. 2498 P., dated 10th June 1896.	Extension of benefits of European leave rules to the officers of the Public Works and Telegraph Departments, and method of calculation of leave earned.
140	Finance and Commerce Department No. 2507 P., dated 10th June 1896.	
141	Public Works Department No. 183 T., dated 10th August 1896.	Charges to be paid to the Telegraph Department for the supply and maintenance of railway telegraph wires.
142	Finance and Commerce Department No. 3597 P., dated 21st August 1896.	Eligibility of officers of the Forest, Public Works and Telegraph Departments for the special additional pension of Rs. 1,000 a year sanctioned for Heads of Departments.
143	Public Works Department No. 209 T., dated 9th September 1896.	Charge to be paid to the Telegraph Department for the supply of railway telegraph instruments.

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Serial No.	Number and date.	Subject.
		<i>Resolutions—concl.</i>
144	Public Works Department No. 144 T., dated 12th June 1897.	Charges to be paid to the Telegraph Department for the supply and maintenance of canal telegraph lines.
145	Finance and Commerce Department No. 2836 P., dated 29th June 1897.	Officers of the Indo-European Telegraph Department to whom the European leave rules have been extended.
146	Public Works Department No. 2352 G., dated 1st September 1897.	Abolition of practical course in England of passed engineer students, Royal Indian Engineering college, Cooper's Hill, except for one or two students selected for a special course for two years or less.
147	Public Works Department No. 3386 G., dated 23rd December 1897.	Orders as to the reorganization of the Public Works Department Secretariat of the Government of India.
		<i>Notifications, etc.</i>
148	Public Works Department No. 139, dated 25th March 1897.	Introduction of system of delivering deferred messages by hand instead of by post, and refunds for loss of such telegrams and for delay in "Urgent" and "Ordinary" telegrams.
149	Public Works Department No. 495, dated 3rd December 1897.	Revised rules under the Electricity Act for the protection of persons and property and the prevention from injury of telegraph lines.
150	Agreement	Memorandum of agreement for the interchange of messages between the Imperial telegraph system of the Government of India and the telegraph system of the Kashmir State.

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